Wageningen University – Department of Social Sciences

MSc Thesis Chair Group: Sociology & Anthropology of Development

# Analysis of changing Farming Strategies in Ethiopia

Understanding the accents of the farmer's agricultural language in the Sendaba Valley from an agro-ecological perspective.

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GrazeLand

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# Abstract

The main purpose of the research has been to draw a sketch of farming practices and identify underlying strategies to discover the strengths and weaknesses of local smallholder farmers around the Sendaba Valley in Ethiopia. The research question 'what farming strategies characterize smallholder farming in the Sendaba Valley, Ethiopia?' is gradually answered through the different chapters. This research is done in cooperation with the Grazeland farm, a Dutch farm that aims to contribute to the development of smallholder farming in Ethiopia. As appeared in earlier researches and cases, it is important to accurately understand the local agricultural structure and context to be able to build upon the farmer's strengths and meet their needs. This research serves to indentify particular strategies of the local farmers rather than to provide required interventions.

The collection of the data is done during a three-month fieldwork, in which three main research methods are used. Firstly, a lot of stakeholders like farmers, veterinarians, foreign investors and agricultural workers were interviewed. Secondly, I conducted participant observation at several smallholder farms to visually verify obtained information. Thirdly, a questionnaire was administered amongst 107 farmers to gain a first impression of their practices and characteristics.

The writings of Jan Douwe van der Ploeg contributed to understand dynamics of smallholder farming. Two main perspectives dominate thinking on rural development in Africa. The agro-industrialist perspective takes a mainstream and often indisputable thinking of agricultural development as a linear pathway for granted. It cognitively aims at modernization through technological innovation, scale enlargement, liberalization of markets, industrialization and intensification which often gives an increasing role to markets as distributors of resources. The agro-ecological perspective criticizes agro-industrialist thinking by emphasizing the need to take the potential and practices of the 'real farmer' instead of a 'virtual farmer' as starting point for agricultural development. Farmers are not incompetent but they have a lot of knowledge, creativity and appropriate practices. There are opportunities of enrichment within their close relation to the nature and high degree of autonomy.

This research indentified two main farming styles in the Sendaba Valley. The most prevalent one is economic multifunctional farming. Those farmers tend to be peasants who make economic decisions, reach a high degree of self sufficiency and conduct multifunctional strategies. Only few farmers appeared to be specializing dairy farmers. Those farmers, who still have characteristics of economic multifunctional farming, are characterized by their attitude to easily connect themselves to markets and by their disassociation from aiming at several activities towards specializing on dairy farming.

The outcomes of the research showed that multifunctional farmers have a lot potential and that endogenous development from the inside out is required. They might benefit from increasing dairy production, but they should be encouraged to incorporate this in their existing farming strategies rather than encouraging them to engage in a process of specializing on dairy production and becoming increasingly dependent to the whimsicality of markets. Sustaining their high degree of autonomy, multifunctional character and original strategies should be focal point.

Foreign investors should not aim at being role models since their behaviour often is not copyable and since their practices are too far removed from indigenous practices. Model farming entails development from the outside rather than from the inside. The most important role of foreign investors is creating preconditions at the market level to trigger the farmer's economic incentives to extend their multifunctional farming strategies and incorporate new farming practices in it. At the farm level, foreign investors might act as facilitators of knowledge, practices and resources, but this should build upon existing structures and should sustain the original character of multifunctional farming and a high degree of autonomy.

# Preface

After having prepared and conducted fieldwork amongst the farmers around the Sendaba Valley in Ethiopia for a few months and subsequently processing and analyzing the collected data into a report, I am glad to present you my final master thesis. This report is the crowning achievement on studying International Development at the Wageningen University for five years.

The research is concerning strategies of the farmers in the Sendaba Valley in Ethiopia. The main goal of this research is to identify the strengths and weaknesses of their practices and underlying strategies. I got interested in this subject since my brother moved to Ethiopia a few years ago to establish a profitable dairy farm as a model for the local farmers. By being an example and by facilitating knowledge, technology and services his farm is expected to launch a change to fill the missing link that is needed to structurally improve local farming and facilitate the starting point of rural development in the Sendaba Valley.

My background at the Wageningen University brought me into personal concerns since my fear was that the strength and opportunities of the local farmers could easily be underestimated and that their needs could not be met. The idea of model farming is doubt worthy. I was triggered to add scientific substantiation to the establishment and development of the Grazeland Farm. My personal statement is that rural development should be grounded in the existing local structures and context and that the original character of local farming should be sustained. In order to be complementary to the needs and to be sensitive to the sound of the farmers, an accurate picture of the farming styles and context must be drawn, accompanied with an appropriate theoretical underpinning. This picture is presented in this report by continuously sketching and re-sketching.

I would like to thank some people who have been essential in this research. Firstly, I give thanks to Paul Hebinck for his positive and supportive supervision and alertness for theoretical underpinning during the process of conducting the research, analyzing the information and writing the final report. Your suggestions and inspiration were indispensable in sketching the picture of the farmers in the Sendaba Valley. Secondly, I would like to thank my brother Geerten Wassink and his wife Marleen Wassink, as well as the donors of the Grazeland farm, for facilitating my stay in Ethiopia. You provided me a lot of information and our discussions concerning different perspectives on farming in the Sendaba Valley have been helpful. Thank you for using your facilities and employees. Hopefully this report will contribute to an effective and appropriate establishment of the Grazeland Farm within the local structure. Thirdly, I give a lot thanks to Alex, Arassa and Teddy, who have provided me a lot of information, who introduced me in the local community and who have done a lot of translational work for me. My hope is that you will benefit from this report and that it tells your story to the world. Fourthly, I would like to thank my wife Margreet Klap whose support, inspiration and encouragement have helped me to go through the last year. Sometimes you got to fall before you fly.

Thank you for taking the time to read this report. I am sure you will have a great time.

Rutger Wassink

2015, nineteenth of October

# **Chapter 1 – Introduction**

This thesis is about how farmers run their farms in the Sendaba Valley in the west of Addis Abeba, Ethiopia and is based on fieldwork conducted in the spring of 2015. The main purpose of this thesis is to identify strengths and weaknesses of strategies and practices of the local farmers. The underlying purpose, in order to support and facilitate agricultural development and to realize a two-sided profitable and sustainable cooperation between (foreign) institutions and the local farmers, is to offer appropriate services that actually meet their needs. An accurate analysis of the local farming styles and strategies is inevitable in this case. Further research is recommended to translate the explored insights into specific interventions that support and sustain the local farming system. This thesis will have a follow-up research by another student in guidance of the WUR department Sustainable Livestock Systems.

#### Structure of the report

This report describes three main storylines to zoom in on the farming styles in the Sendaba Valley. Firstly, the mobilization of resources; secondly, the ways in which those resources are enriched and converted into end products; and thirdly the commercialization of these end products. Those three storylines are initiated by describing two different farming styles in the Sendaba Valley. An elaboration with attention to cultural, governmental and market influence puts the analysis of the three storylines in the local context.

The first two chapters are meant to accompany and account for the way the research is conducted. The first chapter elaborates on the backgrounds and the study area of the research. The second chapter provides an elaboration of the conceptual design and the actual debate on agricultural development, problem description, research questions, hypothesis and ethics of the research as well as a short explanation of the used materials and methods. The third chapter introduces the farming context in the Sendaba Valley and gives insight in different farming styles. Chapters four and five elaborate on how the three storylines manifest through different farming styles, followed up by a discussion of the results, some concluding remarks and recommendations.

In this thesis, I regularly use the terms large scale farming and small scale farming. Those terms must be understood as an indication of the size of the individual farms. The terminology of small scale farming and large scale farming is not meant to indicate the degree of modernization or the use of certain technologies since those two can be found in both large scale and small scale farming. This research particularly aims to identify the way farmers organize their process of resource enrichment rather than the scale on which they operate.

# Introduction of Ethiopia

Ethiopia, formally called the Federal Democratic Republic of Ethiopia, is located in the east of Africa and it borders Sudan, Eritrea, Djibouti, Somalia and Kenya, and its capital is Addis Abeba. It has a rapidly growing estimated population of 95 million inhabitants. 45% of the Ethiopian population lives more than five hours travelling from a city (Dorosh et Rashid, 2013). Ethiopia is the only African country that has never been officially colonized by western countries. Ethiopia mainly consists of fertile highlands, which causes a temperate tropical climate with both fertile wet and infertile dry grounds. The main language spoken in Ethiopia is Amharic, followed by English.

The Ethiopian economy has been subjected to several reforms and is to a large extent based on multifunctional farming structures. Local farmers often do not produce enough to realize significant export of agricultural products. Although some foreign businesses reach high production for international markets, their profits are not always invested in the local economy. This puts pressure

on local markets since local producers are not likely to be able to compete with foreign investors. Some authors argue that agricultural reform based on the development of smallholder farmers is needed to increase agricultural production and to generate an overall development of Ethiopia's economy (Francesconi, 2009; Dorosh et Rashid, 2013; Dercon, 2009). Most of those writers neglect the actual role and strength of the local farmers, something that will be criticized in this thesis.

In recent history, Ethiopia has suffered some major famines, which have led to strides like increasing food production, promotion of market development and the establishment of food safety nets. Due to the famines, Ethiopia is often perceived as a country of droughts (Dorosh et Rashid, 2013). However, in fact Ethiopia is divided in three geographical regions: the dry semiarid lowlands in the east, the wet highlands in the west, and the drought-prone highlands in the north. The variations in geographic and agro climatic zones in Ethiopia have large agricultural implications. The rugged terrain complicates transportation and the large variation in rainfall increases uncertainty of the farmer's harvests. Dorosh and Rashid argue that "Ethiopia's diverse landscape defines certain agricultural production potentials, access to input and output markets, and local population densities, which determine both labor availability and local demand for food" (Dorosh et Rashid, 2013, pg. 21). Taking this into consideration, we might conclude that Ethiopia has a large agricultural potential. Ethiopia doesn't have a main export product except coffee. Teff, wheat, maize, sorghum and barley are main agricultural products which are internally used at the farms or traded at local markets. Livestock traditionally has been the main livelihood resource of the farmers.

# History and context of Ethiopian agriculture

Ethiopia is the only African country that never has been colonialized. President Haile Selassie came into power in the thirties of the 20th century. He introduced a feudal system in Ethiopia and divided land amongst different private and public stakeholder. In 1975 the army committed a coup d'état, after which colonel Mengistu became the president in 1977. Supported by the Soviet Union, he established a communistic regime. Due to several conflicts with Eritrea and Somalia and the withdrawal of the support of the Soviet Union, Mengistu cautiously was forced to implement a democracy in 1991. Only one year later Zenawi became the new Ethiopian leader, who started to liberalize the Ethiopian economy. The influence of the Ethiopian government on the economy is currently very high and influences of the communistic regime are still prevalent. From 1975, some agricultural reforms have been implemented since Mengistu stated that an increase of crop production for domestic consumption and export was indispensable. One of the most important reforms was the land redistribution in which many hectares of land have been redistributed amongst the farmers. However, as Belete et alia describes, ever since there "has been no significant development of agriculture in Ethiopia following the 1975 land reform" (Belete, 1990, pg 1).

The economy of Ethiopia has been dependent to agricultural activities since decades. In 1978, Getahun described how the agricultural sector contributed to more than 50% of Ethiopia's Gross Domestic Product. In 2009, Francesconi also argues that "agriculture is the backbone of the Ethiopian economy, contributing to 48 percent of the gross domestic product" (Francesconi, 2009, pg17). Ethiopia is likely to generate agricultural growth, since 80% of the Ethiopians households depend on agricultural production for their livelihoods, since 85% of its population lives in rural areas and since the country has favourable agro-geographical conditions (Dercon, 2009). Although the physical potential for agriculture is large, still the development of agricultural output, production increasing technologies and production efficiency, with markets as the ideal institution to allocate resources, is needed (Getahun, 1978). Especially this last point of view is criticized in this report since dependency to the whimsicality of markets has some problematic implications.

Multifunctional farming of crop and livestock production is the most prevalent farming strategy in Ethiopia. The kind of crops produced is very diverse and is also dependent to the fertility of the place of production. Most of those mixed farms are found in the higher areas of Ethiopia above 2000 meter high and do only have few hectares land, with labour intensive production in which mainly household members are involved. The livestock sector has always been of great importance. Beside economic values like the supply of meat, milk, wool, hides and traction, livestock has a large social significance. The possession of cattle means wealth and prestige. Though Ethiopia has the largest inventory of livestock in Africa, its productivity and commercialization remain quite low.

Dependent to the geographical location in Ethiopia, Getahun describes four traditional cropping and livestock production systems (Dorosh et Rashid, 2013): (1) the highland mixed crops-livestock complex; (2) the low plateaux and valley mixed agriculture; (3) the pastoral livestock production of the arid and semi-arid zones and (4) commercial agriculture (Getahun, 1978). As shown in figure 1<sup>1</sup>, the Sendaba valley is located in highland mixed crops-livestock complex



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The highland horticulture-livestock complex is a region with much rainfall where particularly ensete, coffee and maize are produced. The highland mixed crops-livestock complex is a cooler highland region, often referred to as the cereal highlands, where wheat, teff, maize and oil crops are produced. Getahun described in 1978 that the production of livestock is the most necessary activity at the farms since it is responsible for accumulating capital (Getahun, 1978). However, most farmers in the Sendaba Valley mentioned that their crop production is more profitable than their livestock.

<sup>&</sup>lt;sup>1</sup> (Getahun, 1978)

Although taking into account Ethiopia's agricultural potential, different reports suggest that agriculture in Ethiopia is actually not growing substantially to keep up with demand and population growth. Cereal and milk production stagnate, although Ethiopia's famous coffee bean production is still one of the most profitable agricultural businesses. Francesconi mentions that "to revitalise agricultural growth, the Ethiopian government and various international donors approved, in 2006, the proposal of the International Food Policy Research Institute (IFPRI) to establish and launch the first Ethiopian Commodity Exchange (ECX) by 2008. The primary goal of the ECX is to promote the commercialisation of major Ethiopian agro-commodities, such as grains, pulses, oil seeds and coffee" (Francesconi, 2009, pg 17). At the same time, agricultural cooperatives are becoming more and more important within the national agricultural strategy, called Agricultural Development-Led Industrialisation, in order to offer increasing integration of markets into supply chains (Francesconi, 2009). Together with the influx of foreign investments, this is often seen to be the road forward to establish higher and more efficient agricultural production. The remainder of this report shows that not agro-industrialization, but agro-ecology creates chances to the way forward of Ethiopian farming.

Particularly the dairy sub-sector has been growing the last few years as the current government has chosen a market-oriented policy with liberalized markets and encouraging private sector investments in the dairy industry. This policy is implemented at a time when the demand for livestock products such as milk, milk products and meat is increasing due to growing population and urbanization (overall population is estimated to grow at 2.9% per year while the urban population increases at a rate of 4.4%), rapid growing of the middle class population, rising disposal incomes (7-10% economic growth per year), and changes in demographic structure of the population (Duncan and Teufel 2010). The fact that this development of the dairy sector should be incorporated in the original multifunctional farming strategies has, regrettably, often been overlooked.

Recent studies on Ethiopian agriculture suggest that Ethiopia to encourage agricultural growth needs to "maintain a delicate balance in which food prices are high enough to ensure incentives for transformation of agriculture, but not so high that they limit long-run growth in the rest of the economy" (Dercon, 2009, pg. 7), to improve technological innovation and agricultural infrastructure, to improve economic conditions in order to establish stable domestic and international markets and finally to regulate foreign investments accurately (Gebre-ab, 2006; Gebremedhin, 2002; Pender, 2001). The agro-ecologist point of view of this research, however, is that rather development from the inside out with a close relation to the nature and maintenance of existing farming strategies is needed instead of modernizing from the outside.

# **Chapter 2 – Conceptual design**

This research criticizes current mainstream thinking concerning the development of agriculture in Ethiopia. In this chapter, I provide an overview of the actual debate, my own point of view and the value of van der Ploeg's critics on linear development paradigms. Different paradigms on agricultural development engage in a debate. A paradigm is a set of models and theories which mutually shape a framework to understand and describe the reality and to outline future perspectives. The paradigms mentioned in this thesis are hybrid practices of development of Ethiopian agriculture: the agro-industrial paradigm and the agro-ecological paradigm. Central in this discussion is how farmers organize the process of enrichment at their farms and how future perspectives of the Ethiopian farmers should be seen and described. The agro-industrial paradigm implies that agricultural growth should be based on continuous scientific research on improved technological innovation, knowledge and more efficient practices. The agro-ecological paradigm takes the smallholder farmers as starting point and prescribes alternative forms of agricultural growth which are sustainable within the already existing farming structure.

# **Debating paradigms: agro-industry**

Different actors like the government, scientific writers and (inter)national agricultural institutions mutually interact in a debate on how to develop the smallholder farmers in Ethiopia. Those actors often agree on the Ethiopian smallholder farmers as being traditional and too small to make sense. Those 'experts' often take a mainstream agricultural thinking for granted. This mainstream agricultural thinking is since years characterized by a focus on modernization and technological innovation as keys for agricultural progression, neglecting the indigenous strengths of smallholder peasant farming. Those mainstream agricultural models are often cognitively oriented and are interplays of different axioms resulting in a certain agricultural paradigm of the farmer *as we think they are* which is called by van der Ploeg as *the virtual farmer*. This way of looking at farmers does not reflect the farmer's opportunities and does not contribute to a sustainable policy of agricultural development regarding the farmers. As follows an overview of different 'indisputable' agro-industrialist thoughts on farmers is given from different perspectives.

#### **Ethiopian policy**

The Ethiopian government is since years focussing to change smallholder farming from self sufficiency to industrial farming (Gebre-ab, 2006). They aim at reforming the markets and connecting them more to the farmers. In their new policy to change 'traditional farming into modern farming', the government aims to convert 'traditional' peasants into entrepreneurs (Dercon, 2009). Development of the farmers is needed in their vision since this replaces current stagnation and agricultural decline. Modern farming then is characterized by technological innovation like herbicides, pesticides, improved seeds and insemination, and the development of the 'Chinese model': smallholder farms need to be boosted "through external support and investments in new technology" (Gebreselassie, 2006, pg. 8). The rent of land by smallholder farmers is only allowed if new technologies like fertilizer and selected seeds are used. Industrialization through expansion, intensification and mechanisation in this view is needed to improve productivity, often causing a disappearance of the small farmers (Hermans, 2010). The weakness of the governmental policy is that it attempts to create a makeable society characterized by modernization. This is stressed by the government's efforts to pull foreign investments to boost Ethiopian agriculture.

From my empirical observations though, it appeared that the ideas of the government are often far away removed from the view and positions of the smallholder farmers. Experts like agricultural workers often aim at the provision and use of modern technologies, but the farmers themselves are not much willing to use new technologies. They often argue that the governmental workers have ideas that are not applicable in their specific situations. The Ethiopian government aims at supporting the larger and richer farmers rather than the smallholder farmers (Benin, 2007) since they see more benefits and future opportunities within those farms. Foreign investors, pulled by the government, do also often not contribute to the development of the small farmers.

#### Green revolution perspective

The last few decades there has been a process of de-peasantization. "African post-colonial governments and the international donor community pursued policies aimed at extending, capitalizing and modernizing peasant production to raise peasant productivity and living standards as a foundation for their industrialization effort" resulting in a "shrink in demographic size relative to non-peasant populations" (Bryceson, 2002, pg. 6).

Most writers recognize low agricultural productivity in developing countries and therefore focus on intensification and modernization to develop agriculture and to increase productivity and efficiency. Traditional farming needs to be changed into modern farming through technological innovation, specialization, scale enlargement, industrialization and standardization. Modernization is characterized by external technologies and national-level policies (Ellis, 2001). Followers of the modernization paradigm expect local knowledge and practices as insufficient to increase production. Their argument is that there has been low productivity since years and that agricultural development stagnated. In this view, there is a need of induced innovation to lift up agricultural development. The modernizing sector aimed at large scale production since "large scale farming using mechanical technology" was seen as "more efficient than the peasant sector" (Ellis, 2001, pg. 4). Benin argues that the resources of the farmers need to be improved (Benin, 2007). Farmers need a larger variety of genetically modified crops. Abegaz states that technological development is indispensable to increase the production at the farms and that improved crops are needed (Abegaz, 2005).

Followers of the green revolution perspective see the farmer's future as linear and fixed. Modernizing farming is the way forward since 'traditional peasant farming stands for the past, inefficiency and unproductivity' (Benin et alia, 2003; Dercon, 2009; Gebre-ab, 2006). According to those writings, farmers have to radically change their strategies and change to modern farming. Although worldwide research indicated that peasantry still exists and it even appears to be a sustainable farming strategy, increasing productivity through modernization, mechanization and specialization has been seen by a lot of writers as the most relevant farming strategy since only this increases production and revenues (Dercon, 2006; Dorosh, 2013).

Also several Ethiopian writers themselves follow the green revolution perspective arguing that the size of smallholder farms must increase and that the use of new technologies is needed to improve efficiency. Intensification and scale enlargement are adequate interventions. The ongoing smallness of Ethiopian smallholders contributes to agricultural stagnation (Gebreselassie, 2006). Another writer, Jema Haji, argues that four things are needed to develop Ethiopian smallholder farmers: technological development, increase of efficiency, an economic approach with an important role of the markets and an increase of agricultural productivity (Haji, 2006). The project plan of the Grazeland farm contains modernization thoughts as well when it states that producers need to be more market-oriented and commercialized, that technological innovation is needed and that agricultural production must be modernized. To conclude, green revolution thoughts aim at developing a complete package of modernisation accompanied with needed knowledge and instructions to conduct this appropriately.

# **Neo-liberal perspective**

In the 90's, a new perspective beside modernization thoughts of the green revolution appeared. Neoliberalism aimed at increasing roles of the markets and a decreasing role of the government. This is characterized by a focus on free markets and the upcoming of a lot of different NGO's in an attempt to take over the interference of the Ethiopian government. Recent writings argue that an implementation of neo-liberal thinking is needed to develop Ethiopian farming. Liberalized markets are often seen as the ideal institution to allocate resources and to provide improved technologies (Bryceson, 2002). Free neutral markets are most able to increase efficiency and agricultural growth. Free markets and stronger relations between producers and the markets are needed to develop smallholder farming. As long as farmers get increasingly connected to the markets, they will have more opportunities to increase production. Even the WTO engages in the idea that farmers should actively participate in open markets (Altieri, 2001). De Janvry argues that peasant farming is too unstable to increase production. Improved resources allocated by the market are more adequate to improve the productivity at the farms (De Janvry, 2012).

Since the market is the ideal institution to allocate resources within the neo-liberal perspective, the influence of the state needs to decrease since governmental influence on the markets hinders its free functioning. "The tendency has been to see African social institutions, especially those associated with rural peasant societies, as constraints on the implementation of economic policies inferring that vested interests and traditional conservatism cannot rise to the market challenge" (Bryceson, 2002, pg. 7). Dercon states that the influence of the government needs to decrease to give the farmers more commercializing opportunities. According to him, the actual problem is twofold: the state plays a too large role in the functioning of the markets and new technologies are implemented at a too small scale to trigger economic incentives of the smallholders. His ideal pathway is both an increase of technological innovation and most importantly a free increase of resource mobilization and commercialization via the market without governmental interference (Dercon, 2009). Dercon is acclaimed by Benin, who states that farmers need to attend markets more for both mobilizing resources and commercializing end products. According to him, farmers stay homines economici who make economical choices. To increase incentives to make economical choices, technological innovation, scale enlargement and a stronger role of the market are needed (Benin, 2007).

Van der Ploeg opposes the idea of free and international markets when he states that "only 15% of the world's total agricultural production crosses borders (thus de facto becoming part of the world market), the remaining 85% (which circulates within national, regional and local markets) is now being aligned with the price levels, trends and ratios that govern the world market" (van der Ploeg, 2010, pg. 3). This implies that a large amount of small farmers is being faced with the negative influences of the establishment of the world markets. In the following section, also a view of the political economy perspective is given. According to Hebinck, the "neo-liberal perspective and the radical political-economy perspective share a structural and linear interpretation of processes of (rural) transformation progressing along predetermined trajectories: from traditional/feudal societies to modern/capitalist societies" (Hebinck, 2008, pg. 4). Whereas the political economy perspective assigns a large role to the government, the neo-liberal perspective states that, although a market oriented approach increases discrimination of the very poor, "development of farming must be assisted and stimulated by the market and related market reforms" (Hebinck, 2008, pg.4).

#### Political economy perspective

The political economy perspective assigns the most important role for the development of smallholder farmers to institutions and the government. Politics reflect the functioning of the economy and important social relations. The state controls land rights and agricultural reforms need to be done by the government and the elite. Wolde follows this paradigm when he argues that institutions need to control markets (Wolde, 2002) and Legesse supports the idea of an increasing role of the government (Legesse, 2004). This is in conflict with the neo-liberalism thoughts which argue that markets increasingly must be pulled away from governmental interference. The Ethiopian government adhere to a political economy looking at their communistic approaches in the past and their large interference in agricultural development nowadays.

To conclude, most mentioned perspectives plead for modernization through technological innovation and agricultural intensification to increase productivity. Smallholder farming and peasantry are often seen as inadequate through this modernization paradigm.

# Problematic implications of the agro-industrial paradigm

The idea that something 'traditional' needs to be changed in something 'modern', is a result of western normative linear thinking without taking local knowledge and contexts into account. The problem of the agro-industrial paradigm is that it takes for granted that, although clear empirics which support the agro-industrial paradigm are lacking, modernization and mechanization are the most important determinants of agricultural development. Most of the ideas are directly resulting from first world settings and indeed appeared to be right to some extent in those certain circumstances. The implementation of the agro-industrial paradigm is often done from the outside; from 'experts' who take for granted that modernisation in all situations will be the way forward. They neglect that modernization means a clash of different perspectives and that this interplays between expert knowledge and endogenous knowledge.

The indisputability of the agro-industrial paradigm implies that empirics contrary to the agroindustrial are difficult to convince. Yet, it is important to keep on thinking out of the box of modern farming and in-of-the-box of endogenous peasant farming. Peasant farming is not per se less productive than modern farming. It might even be argued that peasant farming is more sustainable since it is more able to control and mobilize own resources. To actually counterpart the agroindustrial paradigms and mainstream axioms, there is a need of opposite empirics. This study is an attempt to provide these opposite empirics that conflict with the actual perception of the Ethiopian farmers. They indeed have a story and their novelties are not to be neglected when engaging in the debate on how to develop the Ethiopian farming system.

New empirics show that a large group of farmers didn't profit from the green revolution. Ellis described that the Green Revolution in different studies appeared to don't work. Yet, endogenous practices and techniques become increasingly valuable and the call for an actor-oriented perspective with the farmers themselves involved becomes stronger (Ellis, 2001). Altieri argues that inequities increased and that new technologies weren't applicable at the most farms. Farmers are also often too far removed from markets, which caused the farmers to be excluded from other information, credits and services (Altieri, 2002). Van der Ploeg argues that the constantly ongoing industrialization and the ordering of world markets are important reasons of the current agricultural crisis. "Industrial agriculture involves an, often extreme, disconnection between farming and nature and locality: with natural growth factors (soil fertility, high quality manure, carefully selected varieties and locally adapted breeds) increasingly being replaced by artificial growth factors entailed in external outputs and new technological devices" (van der Ploeg, 2010, pg. 5). Since the farmers have become dependent upon industrial and financial capital, scale enlargement became an intrinsic need, constituting a 'race to the bottom', which caused new high dependencies to markets. The result of this process is that farmers started to follow the logic of the markets and increasingly changed from peasants (with a focus on autonomy, family labour and a self-controlled resource base) into entrepreneurs (with a focus on market integration and competiveness). Specialized and large scale farms which are bound to the markets are the result (van der Ploeg, 2010). "Structural adjustment and market liberalization policies have triggered a widespread erosion of local peasant and social communities" (Bryceson, 2002, pg. 11)

Bryceson argues that the government policies focussing on modernization are undermining the opportunities of the farmers. Although these 'turning point' policies "chip away at peasantries' economic viability, social coherence and class position" (Bryceson, 2002, pg 8), they do not remove local peasantry knowing that the farmers are well able to adapt to different situations. Bryceson describes how a lot of farmers reacted on liberalization by developing local strategies and

endogenous knowledge and practices to develop their own livelihoods. This adaptability particularly shows the malleability and strength of the farmers. "The existence of millions of hectares under traditional agriculture is living proof of a successful endogenous agricultural strategy and comprises a contribution to the creativity of small farmers" (Altieri, 2002, pg. 3).

Long argues that the modernization paradigm doesn't have sustainable answers on issues as climate change, water, biodiversity, energy, population growth, waste, land, soil, labour, composition of diets and health (Long, 2010). Not the agro-industrial paradigm, but rather a different, more endogenous and sustainable, way of looking at the farmers is needed. De Schutter states that increasing food production is not sufficient when not empowering the livelihoods and sustainably using ecosystems of the smallholder farmers (De Schutter, 2012). Paradigms regarding agricultural improvement shifted from state-led to the market-led neo-liberal perspective. The neo-liberal perspective was also not able to adequately describe the future of the farmers. "We must switch from a (post) structural paradigm towards an actor-oriented type of analysis and move beyond structural, linear perspectives of social change" (Bryceson, 2002). The next section provides an elaboration of the agro-ecological paradigm as "a coherent concept for designing future farming systems as it is strongly rooted in both science and practice" (De Schutter, 2012, pg. 8). The challenge is to "maintain the foundations of such modifications grounded on peasant's rationale and knowledge" (Altieri, 2002, pg. 2).

# Debating paradigms: agro-ecology

#### Dynamics of the agro-ecological paradigm

Not only writers within the agro-industrial paradigm participate in the current debate concerning modernization. Although they are a minority, different writers present agro-ecology with an actororiented approach as an alternative paradigm next to the agro-industrial paradigm by taking the functioning of farmers and endogenous development as starting point of agricultural development. "Agro-ecology is the application of ecological science to the study, design and management of sustainable agro-ecosystems. It is highly knowledge intensive, based on techniques that are not delivered top-down but developed on the basis of farmer's knowledge and experimentation" (De Schutter, 2012, pg. 6). "Techniques of farmers are often knowledge intensive rather than input intensive" (Reij et al, 1986, pg. 8). The ideas of the agro-ecological paradigm are currently supported by the United Nations Food and Agriculture Organization, UNEP18 and Biodiversity International.

Agro-ecology goes beyond a one-dimensional view of agro-ecosystems by emphasizing its social embeddedness. The agro-ecological view, in contrast to the agro-industrial view, takes a deep understanding of the natural agro-ecosystems as starting point of sustainable development (Altieri, 2002). Agro-ecology aims at farmers who have low productivity, who are resource-poor and who do not have available new technologies. It approaches multiple land use strategies, traditional resource management techniques, local cropping system design and management, uses of local resources for pest control and conservation of local varieties. Agro-ecology has, according to De Schutter, five main advantages: the rise of productivity at field level; the reduction of poverty; the contribution to improving nutrition; adaption to climate change; and a high extent of farmer's participation. This approach practically maintains agricultural biodiversity and conserves agro-ecosystems; reduces the farmer's vulnerability and reliance to markets as allocation of resources; supports on-farm fertility techniques; encourages the use of the local natural biodiversity and natural resources management and discourages the use of fossil energy (De Schutter, 2012).

The agro-ecological perspective recognizes the need to improve agricultural production. The starting point however is not modernization but rather the local natural and social context. Gliesmann argues that "agro-ecosystems can be manipulated to improve production and to produce more sustainably, with fewer negative environmental or social impacts and fewer external inputs" (Gliesmann, 1998). "The core principle includes reclining nutrients and energy on the farm, rather than introducing

external inputs" (De Schutter, 2012). The problem is not scale enlargement, since also the agroecological school of thoughts can be applied at large scale. The difficulty with the agro-industrial paradigm is that it does not provide sustainable ways of mobilizing resources (Altieri, 2002). As a response, agro-ecological interventions appear to significantly increase productivity at the small farms. Based on local knowledge, the natural opportunities should be enriched. Vegetative diversity should be taken into account; the nature should not be adapted to the social, but the social must adapt to the nature (Bryceson, 2002).

The agro-ecological perspective also aims at strengthening endogenous development in which local knowledge and the mobilization of commodities to increase autonomy has an increasing role (Altieri, 2001). Governmental and foreign institutions should be decentralized and the role of markets should be curbed (Ellis, 2001). Altieri calls for a bottom-up policy when he states that development should be grounded in the resources already available: the local natural resources and the indigenous farmers and their knowledge. "Undoubtedly, the ensemble of traditional crop management practices used by many resource-poor farmers represents a rich resource for modern workers seeking to create novel agro-ecosystems well adapted to the local agro-ecological and socio-economic circumstances of peasants" (Dewalt, 1994).

Natural resource management might be an answer to sustainably interact with the nature. Natural resource management is the opposite of the neo-liberal thoughts of market oriented resource management. Natural resource management implies an interaction between the social and the nature; not the market determines the mobilization of resources, but the way farmers deal with the nature (Altieri, 2002). According to him, "a new approach to natural resources management must be developed so that new management systems can be tailored and adapted in a site-specific way to highly variable and diverse farm conditions typical of resource-poor farmers" (Altieri, 2002, pg. 4). Natural resource management should be applicable within the heterogeneity and different circumstances of the farmers; should be environmentally sustainable; must be grounded in local uses of resources; and should aim at endogenous development (Altieri, 2002).

The creation of local sustainable livelihoods characterizes the peasant's persistent existence. "Sustainable livelihoods approaches can be interpreted as providing a new or different way forward for rural development in the future" (Ellis, 2001, pg. 2). Ellis states that a new paradigm should aim at endogenously constructing livelihoods and that "small-farm agriculture should form the central focus of an agriculture-centred development strategy" (Ellis, 2001, pg. 3). While describing how natural resource management is established within indigenous institutions in Borana in Ethiopia, he argues that development policies should be grounded on local perspectives rather than 'from the outside'. Development agencies increasingly try to include endogenous institutions and community natural resource management within their development strategies. They face the problem on how 'indigenous' should be defined and their largest problem is a "weakened indigenous decision-making structure in natural resource management" (Watson, 2003). Empirics from this research show that new natural resource management institutions often don't meet the needs of the local farmers, since they argue that "what the cows need only the cowherd knows". Watson argues that including local farmers and their expertise in development programs is of great importance (Watson, 2003).

Another research conducted in Eritrea shows how farmers with different backgrounds come together and create livelihoods from farm land and how their ideas diverge from state-led projects and nation building (Poole, 2009). Farmers create future perspectives and a livelihood based on their history, religion, landscape and community. Ecological nostalgia is important in how farmers define themselves, their farms and their landscapes. According to Poole, land has a very social nature and therefore it contains myths, visions and characters. The farmers themselves oppose modernization thinking as they experience unfulfilled promises which appeared to be not applicable in their specific situations. Not modernization, but people's memories of place and their perceptions on the environment determine future perspectives and strategies. Knowing that this is the way people create their own livelihoods, it is not surprising that the government's attempts to create a national modernization identity have failed. The farmers even argued that a loss of land due to modernization attempts meant a loss of the farmer's autonomy to protect their own grazing, forest and water resources. As Poole argues, development agencies need to act from the local perspectives and should not neglect old strategies and structures since the future is held by the past, something that is characterized by farmer's creation of livelihoods through ecological nostalgia (Poole, 2009).

#### Starting point of this research

This research contributes to the mentioned debate by describing the smallholder farmers from the perspective of smallholder farmers themselves. Although the debate concerns their opportunities and future, their vision is often neglected while describing possible future perspectives. The local smallholders receive a voice through this study since their practices and dynamics contain something valuable. Typical in this thesis is its search for enrichment from within, from the farmers themselves, rather than from support derived from markets, the government or foreign investments.

In contrast with the agro-ecological paradigm, my statement is that rural development is not something fixed or linear. Clearly different varieties appear concerning different farming practices like the mobilization of resources, the interaction between the social and the nature and the process of resource enrichment. To oppose the agro-industrial paradigm, my suggestion in this study is that autonomy on mobilizing resources is a more important determinant in rural development rather than modernization and mechanization. Peasant farming is dynamic instead of linear and its focus on controlling own resources, instead of using the market in a process of commoditization, is more sustainable than the way resources are controlled within the agro-industrial paradigm. The potential of peasantry must be revalued. Therefore, focal point of developing agriculture in Ethiopia must be on strengthening farmers from the inside since endogenous development should be 'born from within'. Not linearity based on the past and increased market relations provide changes for development but growth and enrichment are hidden within self sufficiency. Local incentives and initiatives have to be triggered and smallholder farming need to be developed endogenously. Improvement of Ethiopian agriculture is to be reached through enriching the labour process and the way farmers are related to the nature rather than through modernization and scale enlargement.

Ethiopian farmers appeared to be peasants since decades. With their focus on self sufficiency and their independency to markets, they have proven to be able to organize their farming strategies independently. Bryceson describes four characteristics of the peasants: "first, they share the pursuit of an agricultural livelihood combining subsistence and commodity production; second, their internal social organization revolves around the family as the primary unit of production, consumption, reproduction, socialization, welfare and risk-spreading; third, they are externally subordinated to state authorities and regional or international markets that involve class differentiation and transfers of tax and profit; and fourth, they reside in rural settlements, be they widely dispersed or nuclear villages, and they are often identified with a traditional conformist attitudinal outlook relative to more urbanized populations" (Bryceson, 2002). This research follows an agro-ecological and actor-oriented approach in which the stories of the smallholder farmers are narrated and used as a starting point for further research and development. There is a need to assign economical awareness and agency to the peasants and unfold their actual strategies. Although farming still remains human work (actors, cooperatives, institutions, practices and stories are involved), there is an increasing need to unfold farming strategies to understand certain empirical perceptions and seeming inconsistencies.

Attention need to be paid to what already exists and a search for development is to be done outside a structuralised or phased approach. The implementation of an agro-ecological structure needs an actor-oriented approach. The interaction between the social and the nature is where agriculture starts, thus natural diversity must be used. The nature should not be adapted to the human will; but the nature should be used in an interaction with the farmers. Non-commodities are important since it reflects local natural resources and the creation of local knowledge. I argue, in contrast to modernization thinking, that not modernization, technological innovation and increasing connections to the markets are the way forward, but rather self sufficiency and autonomy.

#### Van der Ploeg's different vision

In his book The Virtual Farmer, van der Ploeg identifies new insights in the process of rural development. In contrast to the agro-industrial paradigm, he mentions peasantry as a process that is created and reshaped upon insights and future perspectives of the local farmers themselves. I have been inspired by his work to make a stand against the agro-industrial paradigm that inadequately conceptualizes the pathway of agricultural development. Van der Ploeg focuses on farmers as a social product interacting with the nature rather than with the markets. Their stories and novelties are important rather than their economical features or strategies. Van der Ploeg calls for a process of re-peasantization and decreasing dependency to markets since he recognizes enrichment in strategies of self sufficiency and autonomy.

# The real farmer versus the virtual farmer

The result of the mainstream agro-industrial paradigm is that it creates an image of virtual farmers that does not reflect their actual behaviour, needs and opportunities. Quoting van der Ploeg: "*The virtual farmer* stands for the agricultural entrepreneurs – and their partners, their histories, their work, their environment, and so on – as *we think* they are. However, the real farmers – their work, their environment, their points of view – are further removed from this image". According to him, this should not have been any problem "if only the image of the *virtual farmer* was not used increasingly in policy-making, as a basis for agricultural policy, environmental policy, spatial policy, etc" (van der Ploeg, 2003, pg IX). As argued further in this report, the danger of constructing virtual farmers as *we think* they are, is that we might ignore the existing reality, and that we construct our own agricultural reality of how we think the agricultural system actually is and how it should be (developed). By making our own virtual farmer, by ignoring the existing structure and context and by developing our own set of interventions on how things should change, we run the risk of mismatching the actual struggles and opportunities of the smallholder farming system. This thesis therefore aims to draw a clear picture of the *real* Ethiopian farmer.

# The enrichment of resources

The most central agricultural process within this research is the enrichment of resources by the local Ethiopian farmers in the Sendaba valley. Different strategies, styles and practices are conducted by different farmers in order to enrich their resources. The process of enrichment is shaped through several factors that all play a role in the way it is constructed. The three most important processes are (1) the mobilisation of resources; (2) the conversion of resources into end products; and (3) the commercialisation of these end products. Van der Ploeg argues that farmers are only partly *homo economicus*, which means that they are in a search for the most profitable relation between inputs and outputs (the I/O relation). In a lot current debates the mobilization of resources is neglected. Farmers are seen as homines economici who (need to) integrate their farms into the market. Van der Ploeg describes farmers not as entrepreneurs, but as peasants: producers who evade themselves from the logic of the markets. Not technological innovation and modernization are keys towards success; but, as van der Ploeg argues, rather distancing from the markets and a high degree of autonomy are keys towards progression. By arguing this, van der Ploeg questions the need for modernization and scale enlargement. Describing the mobilization of resources is important to understand processes of autonomy and self sufficiency.

# Coproduction and differing styles

Van der Ploeg mentions the labour process as a proper tool to analyze smallholder farming since the labour process shows how enrichment is realized and what strategies lay behind the farming

practices. In mainstream paradigms, it is often argued that there is a linear regularity between inputs that are converted in a certain output. Van der Ploeg confirms that there are indeed certain patterns of coherence with regard to the optimal I/O relation. Yet, those patterns to the most profitable I/O relation are a "result of the labour process in agriculture" rather than technological innovation. From this labour process, the development of co-production arises: new production functions are continuously created; new patterns of coherence that co-exist next to each other. This leads to variable I/O relations, causing heterogeneity among the different farms (van der Ploeg, 2003, pg 41).

The process of agricultural development moves towards heterogeneity in both labour processes as well as different ways of resource enrichment. Each farm has a different and unique pathway of development. The result of co-existing ways of the mobilization of resources, the conversion and enrichment of resources and the commercialization of end products is that they are variable to some extent: they are alterable and malleable. Due to the process of co-production, this variability leads towards heterogeneity and thus different farming styles. The analysis of the different farming styles is important since they contain opportunities for development and unfolding the strategies of the farmers. Heterogeneity mirrors strategies to deal with influences that determine the way farming practices are organized. Different farming styles are identified in the remainder of this report.

# **Conceptual framework**

The following section interlinks and summarizes the before described underlying theory in a conceptual framework as a fundament of analysis.



# Concept 1: The farm as a socio-technical network

"A farming style is, generally, a mode of ordering: a systematic and continuous attempt to create congruency within those domains in which farmers and their families have to operate" (van der Ploeg, 2003, pg. 101). This process in which the farmers shape their activities and strategies is a process in which other actors and institutions also do play a role, resulting in a socio-technical network: "a particular constellation of various modes of ordering, interlocking in particular ways and collectively defining the apparent courses of action and development opportunities" (van der Ploeg, 2003, pg. 101). This research identifies different farming strategies that create expressions on different socio-technical networks.

#### **Concept 2: Mobilization of resources**

Examples of resources are land, capital, labour, knowledge, water, seeds and tools. Those resources may be obtained from both the markets through commoditization and the own farm through self-sufficient non-commoditization. Within the process of commoditization, access, purchase and control of the resources are significant factors. It is important to know where the resources come from, who their owner is and how they are being controlled. The degree of commoditization indicates the farmers' dependency to the markets with regard to accessing resources, and thus its autonomy. Revenues become marginal when the degree of commoditization tends to equal the amount of output. Reproduction of resources within the farm becomes increasingly important.

Van der Ploeg argues that a certain distance between farms and markets may act as a hidden key to agricultural success. In his vision, farmers are not completely *homo economicus*, but they act as peasants who "actively withdraw the processes of farm management and farm development from the logic of markets that seem to ignore their survival" (Van der Ploeg, 2003, pg. 40). Recent agrarian progression should not be seen as a process of commoditization, but rather as a process of decommoditization in which farmers are taking distance from the markets. The reason why e.g. Dutch farmers have been quite successful may be found in their high degree of control over their own resources and their inventions of developing those own resources. This concerns both the quantitative and qualitative availability of resources and the way it has been managed.

The development of agriculture should happen through a process of non-commoditization, relocalisation and endogenous development, in which own resources and local knowledge are leading factors. "The non-commodity circuit is of strategic importance particularly with regard to markets. It is the engine with which one can sail against the wind if necessary and substitute being adrift for following one's own course" (van der Ploeg, 2003, pg. 61). At the same time, van der Ploeg argues that "self-support and market relations are not mutually exclusive. One might well be a precondition for the other" (van der Ploeg, 2003, pg. 55). This report elaborates on how both dependency and independency to the market are inevitable and needed within the process of rural development and whether the development of the farmers around the Sendaba Valley should be based either on increasing autonomy or increasing commoditization.

#### **Concept 3: Conversion of resources into end products**

The conversion of resources is the process at the farm in which resources are actually being transformed, upgraded and/or enriched to end products. This process is mainly an efficiency-maximizing relation between input and output, the I/O relation. The way different inputs are organized and structured in order to get certain outputs, identifies to a great extent the farming strategy of farmers. This process is also related to the way re-investments of the revenues are being shaped and the way the process of labour is being organized.

Within the conversion of resources, three main objects are to be identified: "firstly, there are the objects of labour, i.e. those things that are converted into new values; secondly, there are tools or instruments – those elements that are fabricated and used to lighten and improve the labour process; the third element is the labour force" (van der Ploeg, 2003, pg. 102). Especially the division of labour determine farming strategies and heterogeneity since the particular connection between inputs and outputs is created through the labour process. Socio-technical practices, thus different styles of farming, are produced and reproduced through this labour process.

#### **Concept 4: Commercialisation of end products**

The third process within the production chain is the commercialisation of end products. The relation with the market and other external factors determine this process to a great extent. Van der Ploeg argues that "connecting production and consumption as ordering principles" are "crucial parts of socio-technical networks" (van der Ploeg, 2003, pg. 41). Marketing strategies, based on consumption

patterns as demanded in the markets, have to be analyzed in order to define the commercialization of end-products to the markets. The relation between farms and the markets with regard to the commercialization of end products is constructed through and determined by competition, foreign influences and institutions. The relation to other farms, especially to the growing amount of international funded agricultural companies determines the commercialization opportunities of the local smallholder farmers.

# **Concept 5: Farm heterogeneity and variety**

Strategies of increasing the efficiency of the I/O relation may cause variety amongst farms. The process of co-production, which is rooted in the different labour processes, will always involve "extreme variable I/O relations", causing heterogeneity among the farms with regard to different labour processes and different ways of resource enrichment. "New production functions are constantly created in and through the process of farm labour: new patterns of coherence that correspond closely with farmers' own interests, perspectives, insights and knowledge" (Van der Ploeg, 2003, pg. 43). This heterogeneity appears in different farming styles, of which the two mainstream styles can be identified as economical multifunctional farming and specializing dairy farming. The differences are sketched in the fourth and fifth chapter in more detail.

Variation always goes hand by hand with selection. On the one hand, variation is a constant search to for some new patterns, new options, to increase the existing diversity. On the other hand, there is a process of selection in which some patterns or practices appear to be more successful than others. This particular selection creates a starting point for the creation of new variation (Van der Ploeg, 2003). The implication of diversity amongst farms means that diversity might function as a mirror to identify the strengths and weaknesses of certain farming strategies.

# Concept 6: Autonomy and sustainability

Central in this research are the notions of autonomy and sustainability. Autonomy may be seen as the ability to be self sufficient and to control own resources. Sustainability may be seen as optimizing the efficiency of the enrichment of resources, the I/O relation, with only little loss of resources. Too much dependency to the markets could be problematic due to the following reasons. Firstly, dependency to markets increases the vulnerability to fluctuations in price. Secondly, dependency to markets increases insecure inputs when farmers do not have access to non-commodities in times of income shocks or market shortages. Thirdly, the quality of the farmers' outputs can be reduced when farmers try to curtail their expenditures in order to increase revenues, which can be a harmful process on the long term. Fourthly, shortages of private means which must be supplied with borrowed capital may become a threshold for improvements in the case of a high degree of market dependence (van der Ploeg, 2003). Van der Ploeg, based on notions of Slicher van Bath, also distinguishes freedom from something and freedom to something. He argues that "the lesser the freedom from, the more restricted the freedom to" (van der Ploeg, 2003, pg. 63), which means that freedom, and thus autonomy of mobilizing resources, must be seen as a starting point for freedom to produce outputs, and thus the ability of agricultural development. The challenge for farmers is not to break their relations with the markets, but to re-negotiate and re-control those relations.

# **Problem description**

It happens a lot that western development organizations or companies aim to implement certain western interventions within non-western contexts that in the end appear not to have the great expected effects which it had on beforehand. The mistake of wrongly understanding, or even not considering at all, the local farming structure and therefore not effectively implementing interventions that actually meet the local needs has often been made. Sometimes the interventions do not meet the local needs, are not sensitive to the local contexts or they are too much top-down implemented. It is important to learn the language of the local farmers and to learn how to look

through their eyes to their reality of agricultural progress, farming strategies and changing agricultural conditions. Western principles and values should be released or re-shaped rather than obstinately trying to implement them. Having this in mind, it is important to conduct an accurate analysis of how farming styles and strategies are constructed. First, the practices, struggles and needs of the local farmers and underlying strategies have to be explored in order to, if it is at least possible, think of interventions that indeed support the local farmers and that meet their needs.

New forms of rural development have to be manifested through "an endogenous process, one that is defined and controlled by the actors involved and that is largely based upon resources at their disposal" (van der Ploeg, 2003, pg. 339). However, as argued before, recent writing often point to modernization from the outside as the way forward. The underlying idea is that the local context and structure has to be considered when encouraging endogenous development of the smallholder farmers in the Sendaba valley. Directly resulting from the conceptual framework and problem description, the following main question and five research questions have been developed:

# "What farming strategies characterize smallholder farming in the Sendaba Valley, Ethiopia?"

- **1.** How do the farmers *mobilize resources*?
- 2. How do the farmers *enrich* and convert *resources*?
- 3. How do the farmers *commercialize end products*?
- 4. What is the specific cultural, institutional and market *context* in which they farm?
- 5. How do the farmers enrol in *non-agricultural activities*?

# **Research objective and relevance**

The main objective of the research is to identify the farming strategies that lay behind the farming practices of the farmers in the Sendaba area. This research doesn't focus in the first place on 'what', but rather on 'why'. The analysis of the local farming styles in the Sendaba Valley contributes to our understanding of the farmers and the different strategies and perspectives that need to be taken into account to create an endogenous development pathway 'from the inside'. Linked to the outcomes of the farming styles analysis, some recommendations are formulated with regard to the functioning and future strategies of the Grazeland farm. Suggestions for follow-up research are provided to translate the outcomes of this research into certain interventions.

The social relevance concerns the farmers in the Sendaba area since this research shows their agricultural functioning and contributes to their development from within. This might help stakeholders to meet their needs. The scientific relevance of this research is to contribute to the knowledge gap of farming systems, particularly peasantry, in the highland mixed crops-livestock complex in Ethiopia. This unique research integrated in the establishment of a Dutch model farm in Ethiopia will give increased insight in how foreign investments can be established most properly in order to actually help develop the local farmers and stimulate rural development. This research adds to the current debate concerning modernization strategies from a local perspective in which the sound of the local farmers is most important. By mentioning the perspective of the local farmers, this thesis encourages agro-ecological thinking and reflexivity on how agricultural interventions are addressed. Lastly, the Ambo University aims to conduct more research in this region. This report may contribute to their knowledge and might function as a starting point for further research.

# **Materials and methods**

#### Triangulation and validity

This research has a qualitative character. Both a literature study and fieldwork are conducted in order to obtain information. Bernard describes that triangulation, the use of more than one method, will increase the validity of the research (Bernard, 2011). A large amount of diverse information will

be analyzed and the different point of views of the local smallholders and other important stakeholders are taken into account in the final description of the farming analysis. By grounding the research on scientific readings and knowledge and views of both insiders and outsiders in the Sendaba Valley, the validity of the research is ensured as much as possible.

#### Literature review

The literature review focuses on especially farming styles and strategies with regard to the Ethiopian context and is the basis of comparing the outcomes from the field study. There hasn't been any scientific research concerning the context of the Sendaba Valley. However, although there is no literature available on this specific context, there is much literature available on the Ethiopian agricultural and farming system in general. The literature study is aimed to provide insight in the most common processes and factors behind Ethiopian agricultural growth or stagnation. Especially farming incentives that lay behind certain farming strategies are identified. Most importantly, the literature review serves to develop an accurate theoretical underpinning of agro-industrialist and agro-ecologist perspectives. The used literature is found via Google scholar and the library of the Wageningen University and is about approximately 60 articles and books.

Beside the literature research mentioned hereinbefore, the leading writing that grounds this research in the broad scientific spectrum is the book "The Virtual Farmer", written by J.D. van der Ploeg, professor at the Wageningen University. This book, which aims to emit a different sound and introduce an agro-ecologist perspective on the actual practices and strategies of the farmers to oppose agro-industrialist perspectives, has been source for large debates the last few years. The analysis of this research is done with reference to this theory and discusses its implications in the case of the farmers in the Sendaba Valley.

# Fieldwork

The fieldwork is done in the Sendaba Valley in Ethiopia. This valley is located two hours driving by car in the West of Addis Abeba. The Sendaba Valley is marked as Ethiopian highland, with fertile soils and a lot of farmers. In this specific region there are not much foreign businesses and the local markets are still rarely connected to the national markets. Farmers mainly produce for own use or local markets. The most important research participants are the farmers in the Sendaba valley. Also other local stakeholders like agricultural workers, governmental workers, veterinarians and students from the Ambo University have provided relevant information.

After arrival in Ethiopia, first a quantitative basis of the local farmers in the Sendaba Valley has been developed. It appeared that around 230 farms are found in this area. Some weeks were needed to get introduced in the local agricultural institutions and to get to know some important stakeholders. Finally, three main methods of data collection have been conducted: a questionnaire, participant observation and interviews.

The **questionnaire** has been developed in the first weeks of the research. This questionnaire is translated by a local contact into the local language, Oromifa. It identifies the basic characteristics of the local farms to gain a basic statistical view on their practices and is completed by 107 farmers. The respondents were randomly selected from the area of the Sendaba Valley. The questionnaire can be found in annex I.

The main strategy to collect data at the field has been through **interviews**. Those interviews are conducted in a semi-structured way. This provided me, as the researcher, structure to the interviews in which certain important themes were elaborated. However, the length and the amounts of certain topics were not fixed, and the interviews were followed by both the input of the researcher and the input of the farmer and/or the translator. This gave possibilities for the farmers to elaborate on what is important in *their* point of view, and gave me, as the researcher, the opportunity to analyze what is

important in the view of the locals themselves. Those interviews were in-depth on themes that appear to be quite important. After having visited the first few farms, access to other farms has been provided through snowball sampling. Farmers who I had an interview with recommended me to visit other farmers.

**Participant observation** of the farmers, the farms and the practices of the farms appeared to be important to gain useful data and information. In order to verify the information provided by the farmers through the interviews, it was important to visually analyze the practices of the farms since this gave the best impression possible on what farmers mean and what their true strategies are. Therefore, besides talking with the farmers, much time has been spent to just walk around, to see how people communicate and interact, to analyze their impressions and activities and to see the organization of the farms with my own eyes.

The translation is done by three different persons. All three of them were young men coming from the local community. They offered me the opportunity to get introduced in the local customs and practices. Two of them were employees of the Grazeland farm; the third was a bio-technology student that I casually met and who was interested in my research.

# **Ethical note**

One ethical note is important to mention since the manager of the Grazeland is my relative. This might mean that respondents sometimes recognized, or even considered, me as the relative of the Grazeland farm owner rather than an independent scientific researcher. This has influenced their incentives and interests of the way they provided information to me. It increased the importance of my behaviour as a researcher to be self-reflexive by constantly analyzing the way I presented myself to the local farmers. This also stresses the importance of using my organ senses, by not only focussing on what I heard, but also by what I saw and recognized. Observation has become more important by being aware of the way the locals may see me. To ensure the validity of the answers that locals provided to me, it was needed to be aware of the importance of in-depth questions and answers, since it appeared that respondents didn't always provide complete or right information.

# **Chapter 3 – Local farming and its context**

Based on the fieldwork, this chapter presents a first outline of the farmers in the Sendaba Valley and the larger agricultural context in which farming is embedded with different point of views involved. Farmers around the Sendaba valley have to deal with a complex influence of several stakeholders and institutions like markets, the government and foreign investments. Arguing from the agroecological perspective, agricultural development should be based on maintaining and increasing the farmer's self sufficiency and their close relation to natural resources. However, due to the increasing influence of different agro-industrialist-minded actors the autonomy of the farmers seems to decrease with problematic consequences. The challenge is to deal with those different influences in a way that it encourages agricultural development from the inside out.

After having described a first impression of the farmers and their context, two different farming styles are elaborated in the end of this chapter as a stepping stone towards chapters four and five in which those styles are deeper elaborated. The first one is the 'traditional' economic multifunctional farmer and the second one is the 'modern' specializing dairy farmer.

# **Geographical and historical context**

The research area is called the Sendaba Valley and is located around 100 kilometres in the west of Addis Abeba. The closest larger city is Ginchi, with a distance of eight kilometres from the Sendaba Valley. The valley is surrounded by several small villages: Warka Kore in the north, Garera in the east, Awash Bole in the south and Ambo in the west (see figure 3). Approximately 230 farmers are living around the Sendaba Valley.



Most of the farmers sell and buy products at the market in Ginchi. Twice a week, the market pulls thousands of people from the rural areas to Ginchi, where they try to sell their products and livestock. Also an agricultural office, a farmer's cooperative, a bank, a hospital, a police station and an investment agency are located in Ginchi. Another large city is Ambo, which is around 30 kilometres from Ginchi. Although those cities are well accessible because of good infrastructure, most of the farmers living around the Sendaba Valley don't go there to sell or buy products due to the relatively large distances. The local farmers argued that the rural character of the area around the Sendaba Valley is changing since the small villages are getting more connected to the larger cities and its markets. One of the reasons behind this process is the improving infrastructure. This does not only mean an outflow of people who are moving to cities, but also an inflow of new knowledge, technology and opportunities, which increases the opportunities and complexity of farming in the Sendaba Valley. As appears later in this report, this increasing connection to areas that are less rural is an important determining factor in the developmental direction of this specific area.

The outcomes of the survey showed that approximately three quarters of the farmers around the Sendaba Valley historically always have been farmers. The reason why they became farmer seems to be economically grounded rather than culturally, since 85,6% of the farmers argued that they became farmers because of the its economical opportunities. Only a small percentage mentioned the cultural normality and a lack of other choices as reasons why they became farmers. This shows that farmers indeed are agents who make economic decisions. Yet, a governmental worker located in Warka Kore told me that around half of the farmers in the rural area of Sendaba still lives below the poverty line of one dollar per day. Farmers seem to perpetuate rather to structurally develop.

# Daily functioning of the farms

#### Physical appearance of the farms

Most of the farmers living around the Sendaba Valley are located in small groups close to each other. The compounds of the farms are often surrounded by fences made of eucalypt wood. Inside the compound, some buildings, cattle, crop production and tools are found. The farms mainly exist of two or three small buildings: one for living, one for cooking and household work and a barn for the cattle. It strikes that the larger and richer farmers mainly have the most structured and tidy compounds. Most of the crops are cultivated outside the compound, except the smaller crops and vegetables. The cereals and its straw are stored at large piles.

#### **Activities and profits**

The survey showed that agricultural activity is the most common source of income for 96% of the farmers in the Sendaba area. Some farmers are engaging in non-agricultural activities beside their work at the farm. The last decades there has been a shift in agricultural approach and practices. Where in the past livestock breeding was the most important activity at the farms, nowadays the focus of a lot of farmers is tending towards the production of crops and particularly vegetables. The value of livestock has been decreasing and the revenue opportunities of producing crops have been increasing. This is especially due to the marketing opportunities of vegetables and the indirect profits from cereals as input of the own farm. Although the government still is the owner of the land, farmers around the Sendaba Valley use around 1-4 hectares of land for own production. Land that is not specifically cultivated by a farmer is mainly used as common grazing land. A detailed analysis of the different activities addressed by the farmers in the Sendaba Valley with reference to the different farming styles is given in chapters four and five.

#### Livestock breeding

The farmers in the Sendaba Valley, regardless their specific farming style or strategy, have different types of cattle. Sheep are the most prevalent ones, followed by cows, bulls and oxen. Part of the farmers breeds livestock particularly for fattening, while another part, as will appear later in this

report, increasingly tends to dairy farming. Oxen and bulls are used for doing heavy work like ploughing. Most of the cows are from local races, although some farmers show an increasing breed of the Frysian Holstein race.

# **Crop production**

The production of crops is the most profitable activity at most of the traditional farms in the Sendaba area. Most of the cereals are used as feed for the cattle. Types of produced vegetables are garlic, bean, onion, pepper, potato, tomato, beetroots, cabbage and lettuce. Types of produced crops are maize, barley, teff, sorghum and wheat. Beside the crops, eucalypt wood production is also a broad applied agricultural activity to earn money. Most of the farmers do not have the possibility to irrigate their crops; they are dependent to the rain seasons. Farmers who have access to water sources have significantly higher yields. The last few years, there has been a fast development of technological tools, like herbicides, pesticides and fertilizer, to increase the production of the crops.

# **Future perspectives**

Especially the last few years, agriculture in Ethiopia has been developing and innovating since farmers increasingly got access to external knowledge and improved techniques. This process puts pressure on controlling the input of resources, maintaining self sufficiency and future perspectives of the farmers. I explored that only a small (but growing) group of farmers tends to modernize and generate a closer input-oriented relation to the market in contrast to lots of farmers who aim at self sufficiency. This antithesis is particularly visible between the different generations.

"The older generation of farmers thinks traditional; however, the new generation recognizes chances and wants to change their practices. The largest problem yet is the lack of knowledge on how to actually change." – Establisher of the farmer's cooperative in Ginchi

Younger generations of farmers, influenced by external modernization ideas, tend towards specializing on dairy farming. They are more open-minded towards changing their agricultural behaviour and adapting new innovations. Farmers who have a stronger attitude towards adapting modern dairy strategies are characterized by clearer future perspectives and investment strategies. Nonetheless, the role of peasant farming is still large. Those farmers have proven to be able to profitably organize their farms and practices and adapt to different circumstances.

# Influence from the government

#### Introduction

Most of the farmers around the Sendaba Valley indicated that they do not have a negative attitude towards the interference of the government regarding their agricultural practices and opportunities. From the survey it appeared that 50% of the respondents indicated that there is some governmental interference but that this is not highly determining their agricultural activities. Other farmers mentioned the government as daily restricting or influencing their agricultural activities (18%) and only 32% indicated no significant governmental influence. The opinions differ, illustrated by Girma, a farmer in the Sendaba Valley: "the government is responsible for the general development of the country and common goods like roads, clinics and schools. This does not directly influence the functioning of the farm, but it indirectly results in an overall development that has positive influences on our farms. Sometimes I have a negative attitude towards the government for not taking responsibility, for supporting certain regions unequally and for being corrupt and not transparent".

The Ethiopian government got increasingly involved in the development of agriculture and dairy farming and has put its mark on modernizing Ethiopian smallholder farming since the reforms of 1975. Different programs to develop agriculture and to present new technologies are implemented

by the government. A new tax system and several new regulations and interventions are influencing the daily functioning of the farms. The government is also responsible for developing infrastructure like roads, electricity and internet connection. It struck that the larger the farms are, the more they indicated to be subjected to governmental restrictions and support. The role of the government in some sense appears to be complex and duplex, as becomes clear in the following paragraphs. The influence of rigid governing from the past is still having its resonance in the present, despite its increasing modernizing character.

# Modern farming

One of the most important focal points of the governmental policy the last few years is the program to "change traditional farming into modern farming". This policy characterizes modernization thinking from an agro-industrial perspective and aims to develop an agricultural industry with high productivity by supporting and facilitating the development of the dairy sector. This policy mainly focuses on developing new technologies and providing trainings for the farmers to encourage specialization and increasing production. Implicitly, the policy increases dependency to markets as ideal institutions for allocating modern inputs. This stresses its external input oriented character.

Arguing from an agro-industrial perspective, different stakeholders state that the idea of the government concerning 'modern farming' could theoretically develop and modernize Ethiopian peasantry. They argue that there is a fond of external influx of knowledge, facilities and innovation to trigger agricultural development. Those external inputs could, in their vision, contribute to improve efficiency and initiate modernization. My approach in this study is that not modernization and technological innovation from the outside, but that rather revaluing and strengthening local farming from the inside is the way forward.

# Stimulating dairy farming

At the government-led agricultural office in Ginchi there are plans to stimulate an increase of milk production by crossbreeding the local cows with Jersey and Frysian Holstein cows on a large scale. Already quite a lot farmers have chosen to artificially inseminate their cows with the before mentioned races to increase both milk production and fattening. Furthermore they try to promote the sale of quality food like concentrates to increase the quantity and the quality of the milk. The government also implemented programs which are aimed to lower the threshold of borrowing money for new investments by improving the banking accessibility and lowering the interest rates.

# Developing production improving technologies

The government argues that productivity at the farms must increase. One of the most important recent interventions therefore is to develop technological inputs that increase the productivity and yields at the farms. Examples of technological innovation are selected seeds of better quality and lower prices to increase production; herbicides, pesticides, insecticides to decrease failing harvests; and concentrates to both improve milk production and fattening of the cattle.

#### Providing trainings and developing FTC's

Beside the provision of practical tools that may increase productivity at the farms, the government also focuses on providing trainings to improve knowledge and to change mindsets. Those trainings are given by several governmental agricultural workers who are positioned in almost all cities and villages. Those trainings are provided within Farmers Training Centres (FTC's). The FTC in Warka Kore has three hectares of land and functions as a demonstration farm for the farmers. Practical trainings are provided to teach the farmers by both theoretical underpinning and practically experiencing. The target of the FTC's is to modernize farming by training farmers on all different agricultural matters in a practically and innovative way, e.g. dairy production, cattle production, crop production and different ways of using natural resources like water, forest and soil. FTC's are to develop farmer's attitudes, knowledge and different schemes on how to modernize.

# Struggles to modernize Ethiopian farming

Although the 'modern farming' policy potentially is seen as the way forward to develop Ethiopian smallholder farming by the Ethiopian government, there still are some constraints why this policy is still not having the large impact as it was expected to have on beforehand. Insiders consider the interventions as removing from and not contributing to their needs. Firstly, a lot farmers mention that the policy doesn't meet their needs since they need more basic support rather than the provision of advanced technologies. Secondly, prices of the new technologies are often a burden to use them at a large scale. Thirdly, the farmers have a lack of knowledge on how to properly use them. Fourthly a lot of farmers lack trust on their actual profits. Fifthly, a lot of farmers mentioned that the governmental agricultural workers are too far removed from the practices and strategies of the farmers to provide suitable support. In addition, the ideas behind the 'modern farming' policy are not always accessible and applicable on large scale and in all different situations. This policy is also difficult to implement due to a farmer's lack of attitude to modernize.

Although the Ethiopian government faces some problems while implementing their policy of 'modern farming', at this moment a certain 'moment of truth' can be identified. Actually, a large agricultural change is taking place, especially in between the different generations. The young generation of this moment is ready to develop and to improve their agricultural opportunities. This moment of truth is anyhow a fertile soil for change and development, although this should be done based on existing structures from the inside out. The challenge is to implement a policy that suitably meets the needs of the farmers and that takes their ideas and perspectives as starting point rather than implement mismatching external ideas.

# **Governmental institutes**

In this section some governmental institutions and their functioning are elaborated. Those institutions are the agricultural office in Ginchi, the agricultural department in Warka Kore, the Hooleta research centre in Ginchi and schools around the Sendaba Valley.

# Agricultural office in Ginchi

In Ginchi an agricultural office is instituted. This office is established by the government and aims to support the local farmers on different matters. The agro-industrial perspective of the government clearly becomes visible in the development of the different technological innovations and its role in distributing modern resources. There are different branches within the office like land management, water management, rural development and veterinarian services. The branches of land and water management are researching the quality of the soil, processes of soil degradation and the way flows of water can be managed. The veterinarian service at the agricultural office is well organized. The veterinarians have a lot of knowledge and their work is accurate. A lot of farmers attend it for medical assistance like vaccination, artificially insemination and counselling on health. The artificial insemination is done to efficiently crossbreed the local cows with more productive races. Vaccinations are done only after a certain disease is detected rather than preventively. Veterinarian service is very cheap due to the support from the government. Inseminations and vaccinations cost around 5 up to 10 Birr. Concentrates, herbicides, pesticides, insecticides and selected seeds are also sold at the agricultural office. A seed quality control laboratory is established to test the quality of both local and selected seeds.

# Agricultural department in Warka Kore

In Warka Kore, a village close to the Sendaba Valley, a department from the agricultural office in Ginchi is permanently situated. A veterinarian and two agricultural workers (one on livestock breeding and the other on crop production) are running the department. They also provide trainings within the FTC in Warka Kore.

#### Hooleta research centre in Ginchi

In Hooleta, a city close to Addis Ababa, there is an extended agricultural research centre from the Ethiopian government to research how the productivity of dairy farming, livestock breeding and crop production can be improved. In Ginchi, there is also a small department from the Hooleta research centre with 26 hectares of research land. The main activity is to develop new and better seeds of proportional prices. From each seed, around ten varieties are experimented to explore which one grows faster in certain circumstances (e.g. amount of water and sun light) and which one has higher productivity. The seeds are tested in laboratory by educated agricultural researchers.

#### Schools

Close to Warka Kore, there are two schools which are established with support from both the organization Save the Children and the Ethiopian government. Still, many children don't go to school since the indirect costs of schooling is quite high. The parents don't have to pay the school fees, but additional costs like pens, uniforms and papers have to be bought by the parents, which is quite an investment according to the local Ethiopian standards. Children are also traditionally needed at the farms to participate in the labour process. Mainly two types of children attend school: the children whose parents can effort to pay the additional costs, but more importantly, the children whose parents recognize that children who go to school have larger economic opportunities for future.

#### Restrictions

Only few restrictions imposed by the Ethiopian government influence the daily functioning of the farmers. The two most important are taxes and restrictions on the production of eucalypt wood.

#### Restrictions regarding eucalypt production

The production of eucalypt wood is proven to highly degrade the soil since it derives a lot minerals and water from the soil. Therefore, the government implemented restrictions on the production of eucalypt trees. Farmers are only allowed to cultivate a fixed amount of hectares with eucalypt trees, depending on the size of the farm and the specific area. Foreign investors are prohibited to produce eucalypt trees. The local farmers mentioned these restrictions are negatively influencing their multifunctional farming. Still, they take the long term negative influences for granted and keep on earning money on the short term since its revenues are too high to stop producing it.

#### Taxes

All farmers have to pay taxes. Both taxes concerning the farm and trading products have to be paid. Each farmer has to pay around 100 up to 400 Birr for the yearly taxes, depending on the size of the farm. Also taxes (around 10 Birr) must be paid for each sold piece of livestock at the market. Taxes are not high and have mainly consequences for merchants rather than for the farmers.

#### Facilitating infrastructure and legal certainty

Another important role of the government is facilitating the development of infrastructure which connects the farmers more easily to local and regional markets. Roads are often well constructed around the Sendaba Valley. Several farmers mentioned that the construction of a new road to Ginchi increased their connection opportunities to the markets. The development of cellular network, electricity and water supply is still faltering. Beside the facilitation of infrastructure, the government is also facilitating legal certainty. It often happens that farmers mutually make agreements on different issues. The government ensures agreements between the farmers. One might go to court to enforce the agreement of contracts.

#### Governmental weaknesses

Although the government is implementing policies that might have potential positive impacts, there are also some weaknesses to be recognized with regard to the governmental functioning.

#### Historical governing influences

The historical way of how the government and institutions were organized has impact on the way the Ethiopian government acts today. Most decisions are made and implemented top-down without taking perspectives of other stakeholders into account. The bureaucratic governmental structure often has unknown double layers, which increases inefficiency and causes anxiety amongst the farmers. As a result, farmers often have an attitude in which they are not likely to be different or to take progressive initiatives. People are afraid to protrude their head above the parapet.

#### Corruption

A lot of stakeholders I spoke with mentioned that the Ethiopian government is corrupt to a large extent. As they argue, almost all governmental stakeholders at different levels ask bribes for several services. This corruption makes it harder to make proper decisions and to implement policies that encourage development of Ethiopian farming.

#### Regional affiliations

The Ethiopian country is large and around 90 million people are living in Ethiopia, which impedes a healthy and targeted functioning of the government. This makes it more difficult to connect the right people to each other and to appropriately implement policies. Due to the government's difficulties to provide and establish policies on a large scale, decision making is segmented into several areas. Ethiopia exists of nine provinces. Oromia is the province of which the Sendaba region is part of. Farmers from all provinces pay the same amount of interest and money to the government, but the received money is not equally divided among the different provinces. This depends on the province where the actual governor or minister originally comes from. The current minister is from the province Tigray, which means that farmers in e.g. Oromia are less likely to receive support.

# **Cultural implications**

Farming practices are influenced by certain customs and cultural notions, if not to say that farming in Ethiopia could be seen as a cultural process itself. Culture is having both positive and negative effects on farmer's practices and opportunities.

#### **Family farming**

The social character of farming is characterized by family farming in which all family members are contributing to the functioning of the farms. Family farming implies farming as a social networking process as the farmers cooperate, discuss and copy each other's practices and means of production. Only some farmers, especially those who focus on dairy production, have paid labourers to work at the farm. The farmer's households are in most cases quite large. Households existing of 6-10 members are normal rather than an exception. Some children of the farmers go to a local school, although most of them do not attend school. In some cases, the parents can't effort to pay the required school fees or in other cases the children might be needed to do work at the farm.

#### Farming as a social process

Not only family members are involved in the social process of farming, but also other neighbour farmers play a role within the farming practices and the construction of knowledge. Farmers support each other in a lot different ways. In time of income shocks or heavy workloads farmers help each other by providing labour or money. The one time farmer A supports farmer B, the other time it is the other way around. This is also the case when a farmer is sick or has died. In the case of the latter situation, the local community has established its own insurance system. All members of the community provide an amount of money which is given to the family of the deceased farmer in order to pay for the funeral and other costs. Each community has a council of elders which comes together monthly to discuss several common agricultural problems, disputes, addressed issues and the current state of affairs in the community. They also decide about personal issues like marriages and divorces.

"The result of farming as a group process is both receiving and giving support in difficult times of sickness, death, marriage, and mutually construct knowledge on best practices."

– Kabede, farmer in Awash Bole

It happens a lot that youngsters who start a farm are being supported by their family or neighbours with labour, cultivation of the land or a certain amount of money or cattle. The youngster e.g. might receive a cow for which he is responsible. He pays the needed daily input of the cow, but he also receives daily revenues like milk. After a few years, when the cow has been fattened, the original owner sells the cow. When the original purchase price of the cow was 10000 Birr, and the actual selling price is 15000 Birr, the owner gets the original price and 50% of the additional revenue: 12500 Birr. The youngster receives the other 2500 Birr that he might use as starting capital.

# The construction of knowledge

Farmers socially interact a lot with each other concerning different topics. The market, for example, seems to be also a place for social life. Farmers contact each other, exchange experiences, share information and drink coffee together. They traditionally construct knowledge by discussing and sharing certain practices, looking around at other farms and copying each other successful practices. This implies that differences between farmers naturally vanish more and more because of the similarizing effect of traditionally constructing knowledge and best practices.

# The interrelation of farmers: competitive or supportive?

The business relation between the farmers appears to be supportive rather than competitive. However, this is mainly the case between farmers and their close neighbours within the same villages. Between villages, as some farmers argued, there is indeed a competitive attitude towards each other. The attitude towards foreign investors is often competitive and with suspicion.

#### **Gender roles**

The labour process at the farm has been shaped by different gender roles. The role of the women is mainly inside the compound. They prepare food, take care for the children, feed the cattle, do household work, engage in light work at the farm like weeding and taking care for cattle and they help the men wherever this is needed. Furthermore, milking is especially a women task. Men have mainly tasks outside the compound like ploughing, digging dices, harvesting and threshing. Men also sometimes participate in external additional job. Also at the markets there are certain gender roles. Men take care for trading the cattle; women are responsible for the sale of crops and seeds.

#### Suicides

A high suicide rate is peculiar in the rural area of Warka Kore. It happens a lot that particularly young people in the rural area commit suicide, mainly by drinking agricultural poison. The local people couldn't tell me specific reasons of this high suicide rate, but they indicated that this has increased the last few years and that suicide problems particularly concern rural areas. This means that young people living at farms or in the rural area are facing such high problems that they don't see any other solution than committing suicide. Although there seems to be a positive relation between the increasing suicide rate and recent modern agricultural trends, it is difficult to describe any relation to the development of agriculture, meaning that this notion needs further research.

# **Influence of foreign investors**

#### Introduction

The opinions regarding foreign investors are not unanimous. Some farmers mention positive consequences of the establishment of large foreign farms, others mention problematic implications. From the survey it appeared that 27% recognizes regular foreign influence at their farms. Another

34% mentioned foreign influence as present, but not determinative and 39% doesn't recognize large influence from foreign investments. It is clear that foreign investors have influences on market prices, employment, the construction of knowledge and the provision of new practices and tools. Like the governmental influence, there also appeared to be a positive relation between the size of the farm and the extent to which it is being influenced by foreign investments.

Before describing both the mentioned positive and problematic influences of foreign investments around the Sendaba area, the following explanation regarding the attitude of local farmers towards foreign investors must be explored. This example is concerning the establishment of the Grazeland farm. It shows that the underlying cultural attitudes towards foreigners are more complicated than it seems to be at first sight. While meeting people, it often seems that they are grateful and thankful towards the Grazeland farm, but after I talked with Alex and Arassa, two employees of the Grazeland farm, it seems that people have more inner negative feelings than they show from the outside. Especially the fact that the Grazeland farm received a lot land from the government, which traditionally has been seen as common grazing property of the local community, has generated negative feelings. This negative attitude has large underlying implications. Local employers at the Grazeland farm are sometimes seen as betrayers because of their job at the foreign farm. Alex and Arassa indicated that they keep on cooperating with foreign farms because they believe in their positive influences for future. They though argue that the Grazeland farm must proof its own potential for the local community since locals 'only believe after they see'.

# **Problematic influence**

Local farmers sometimes mentioned problematic attitudes towards foreign investors, due to for example influences on market prices, a lack of integration and a seize of land.

#### Influence on market prices

The opinions about the influence of foreign investments on prices of products at the local markets are diverse. Some farmers mentioned that foreign investments have a lot influence on the height of market prices, which they pretend as negative. Foreign investors are able to produce products of higher quality for relatively lower prices, which is having negative influence on the competing positions of the local farmers. Others mentioned that a large part of the foreign investment's production is not sold at local markets and that therefore foreign interference in local market remains low. According to local farmers, products from foreign farms are still too unattractive for the local population to buy due the higher absolute prices.

#### Lack of local integration

Several farmers mentioned that foreign investors often do not integrate a lot in the Ethiopian culture and markets, which they see as something negative. They would like the foreigners to more integrate in the local context in order to increase their actual positive effects and their capacity to encourage agricultural development. It appeared that a large part of the production from local investments is not sold at local markets. Most of the products are sold to other foreign companies in Ethiopia or they are exported to first world countries. A large part of the input of the foreign investments is also imported from their home countries. The purchase of input and the commercialization of output of the foreign investments therefore are only limited affecting and stimulating the local economy.

#### Seize of land

It happens a lot that foreign investments are negatively approached due to their confiscation of land. Although most of the land in Ethiopia is state property, the local population has been using the land, which is confiscated by foreign investors, for such a long time that it has become their own property in their eyes. Since the local farmers previously have been using the land as grassland for their cattle, they are being faced with a decreasing amount of land for their own use. This is one of the most important reasons why the local communities approach foreign investors suspiciously.

#### **Positive influence**

Farmers also indicated positive influences from foreign investments e.g. the provision of trainings, technologies, employment and qualitative products at the market as well as diversification and stimulation of local development.

#### Trainings

A lot of foreign investments try to provide trainings for the local farmers. Those trainings regard dairy production, livestock breeding and crop production. At a Chinese centre, around 150 farmers are being trained weekly. Together with the trainings from the Ethiopian government, this share of knowledge is seen by agro-industrialists as an import external inflow of knowledge to increase agricultural modernization.

# Implementation and demonstration of new technologies

Agro-industrialists argue that an external influx of new technologies is needed beside the development of knowledge to modernize Ethiopian farming. Foreign investments often stimulate the use of new technologies amongst the local farmers e.g. the use of artificial insemination, improved seeds, fertilizer and production improving tools.

# Provision of facilities

Foreign investments often have large effects on the infrastructure of Ethiopia. A lot new roads are constructed by Chinese support. Foreign investments also offer facilities like improved feed for the cattle, veterinarian services and crossbreeding programs with more productive bulls.

# Employment

Most of the farmers mention employment as the most important positive influence coming from foreign investments. It shows that although foreign investments sometimes have certain ideas on the development of knowledge and new technologies, the locals themselves indicate that just the provision of jobs is the most helpful influence of foreign investments.

#### Provision of quality products

Foreign investments often provide products of good quality at the local markets. However, the prices of those quality products are often higher which makes it more difficult for the locals to buy them. The products of foreign investments are not only of more quality, but they are mainly also more diverse causing diversification at the markets. This diversification is mentioned by some farmers as an external injection to stimulate diversification and development of the local markets.

# Two different farming styles

In contrast to attempts to industrialize Ethiopian agriculture, the agro-ecological paradigm distances itself from linear industrial thinking. Van der Ploeg argues that patterns of coherence towards the most profitable I/O relation are a "result of the labour process in agriculture". From this labour process, the development of co-production arises: new production functions are continuously created; new patterns of coherence that co-exist next to each other. Due to the subsequent coexistence of different labour processes and farming practices, heterogeneity occurs amongst the farmers in different styles of farming. Two coexisting farming styles are roughly identified in this research. The analysis of the different farming styles is important since revealing the strategies of the farmers might be starting point of further agricultural development.

#### Farms as socio-technical networks

Farms around the Sendaba Valley, in accordance to the argument of van der Ploeg should be seen as socio-technical networks. It appeared that farmers are continuously ordering their households and circumstances in an "attempt to create congruency within those domains in which farmers and their

families have to cooperate" (van der Ploeg, 2003, pg.101). In the field of (in)directly and mutually interacting neighbours, governmental, geographical, cultural and foreign influences, the farmers have proven to find old and new pathways of perpetuating their farms. Specific strategies are developed through time by regularly defining and re-defining different domains of farming. Those strategies are continuously changing and re-discussed. Processes of re-production and co-production appear within the quest to more profits and more efficient practices. Co-production, through a process of diversification and division of production, seems to be a process that is evolving since the last few years, although this is still taking place on small scale.

Directly following from the farms as being socio-technical networks, different farming styles that show the farmer's underlying strategies are recognized. Variation is the result of a "constant search for new patterns, new combinations to increase the already existing variety" (van der Ploeg, 2003, pg. 42). At the same time, as van der Ploeg argues, selection is highly determining farming styles since the one strategy appears to be more successful than others. The result of selection is heterogeneity and the creation of multiple co-existing patterns of farming, which are constantly reshaped and reproduced.

# Two co-existing styles

Having described a short introduction on the agricultural context in which farmers around the Sendaba Valley run their farms, it is time to take the different strategies of the farmers as starting point for an elaboration on two different occurring farming styles. During my fieldwork in the Sendaba Valley I identified two main farming styles: **economical multifunctional farming** (EMF) and **specializing dairy farming** (SDF). The differences between the two farming styles is particularly found in the way the farmers are related to the markets and institutions and most importantly the way they deal with natural resources. Beside the mobilization of resources, the enrichment of the resources differs in the way the farmers organize the labour process. In the remainder of the report, those two farming styles are elaborated in more detail regarding the three story lines of resource mobilization, resource enrichment and sale of end products. The reason why especially the first style, economic functional farming, is elaborated in detail is to proof that farming characterized by different activities and self sufficiency, should not be seen as an inadequate farming style, but rather as starting point of further development from the inside out rather than from the outside.

# Economical functional farming (EMF)

This first style of farming tends to peasantry with a high degree of autonomy and self sufficiency and concerns both farmers with a larger and a smaller amount of land available. Those are the 'traditional' farmers which are seen by followers of the modernization theory as inadequate to reach high production. Economic multifunctional is characterized by a combination of several activities like livestock breeding, crop production and eucalypt production, from which the production of crops is the most profitable. Those farmers try to keep themselves away from the markets as platforms to allocate resources, and they are homines economici because they are in a search to make efficient economical decisions. The labour process of this group of farmers is characterized by the engagement of family members.

# Specializing Dairy Farming (SDF)

The second group of farmers, which is a minority compared to the multifunctional farmers, doesn't seem to have problems to connect themselves to institutions and they easily rely on markets as the most important source of input. In contrast to the economic multifunctional farmers, this group of farmers aims at specializing and optimizing on one specific activity, which often appears to be dairy production. They are subjected to a high level of governmental interference and make increasingly use of new technologies to improve productivity. Compared to the 'traditional' economic multifunctional farmers, the specializing dairy farmers are supposed to be modern(izing). Those farms are seen as modern model farms for the future by the government.

The most important feature of specializing dairy farmers is that they increasingly connect themselves to markets to mobilize resources, in contrast to economic multifunctional farmers who have a high degree of autonomy and who aim at economic non-commoditization.

| Economical multifunctional farming                | Specializing dairy farming                       |  |  |
|---|--|--|--|
| High degree of self sufficiency regarding the     | Dependent to markets regarding input. The        |  |  |
| mobilization of resources. Non-commodities        | farms are often too large to be self sufficient. |  |  |
| produced at the own farm are the most             | They also need the market for generating         |  |  |
| important inputs. Close relation to the nature.   | improved resources.                              |  |  |
| Mainly using a small amount of land for own       | Often using a larger amount of land for own      |  |  |
| production.                                       | production.                                      |  |  |
| Focus on different money raising activities like  | Specializing on one single activity often dairy  |  |  |
| livestock breeding, crop production and eucalypt  | farming  |  |  |
| production.                                       | iumi.  |  |  |
|   | Use of advanced and motorized tools. Those       |  |  |
| Use of traditional hand tools.                    | farmers have more opportunities to buy fuel or   |  |  |
|   | get connected to electricity.                    |  |  |
| Hesitant attitude towards improved                | Constant large use of improved technologies      |  |  |
| technologies like herbicides, pesticide,          | offered by the market to increase production     |  |  |
| insecticides, fertilizer and selected seeds.      | and enrichment.                                  |  |  |
| Often producing for own use and local markets.    | Often producing for regional markets.            |  |  |
| Small amount of financial means available, but    | Larger amount of financial means available       |  |  |
| enough to perpetuate multifunctional farming.     |  |  |  |
| Investment strategies are aimed at perpetuating   | Clear investment strategies and more             |  |  |
| activities and revenues rather than developing    | opportunities due to more money available.       |  |  |
| new or more sustainable activities.               | Investments focus on production and efficiency.  |  |  |
| Knowledge is mainly locally and traditionally     | Knowledge is constructed based on external and   |  |  |
| constructed.                                      | new information.                                 |  |  |
| Little external paid labourers involved.          | Frequent use of paid labourers.                  |  |  |
|   |  |  |  |
| Subiected to increasing but still small influence | Focal point of the Ethiopian government and      |  |  |
| of the government.                                | therefore subjected to structural influence from |  |  |
|   | the government (both positive and negative).     |  |  |
| Slightly influenced by foreign interference.      | More influenced by foreign investments.          |  |  |

In between the two farming styles, the most important difference is the different connection to the market. SDF's are much more dependent to the market concerning the mobilization of resources and the commercialization of end products. Due to this dependency and inability to be self sufficient, they are more vulnerable with respect to accessing and controlling their inputs. Furthermore, SDF's are often more supported and facilitated by the Ethiopian government since they, in the governmental vision, are considered as pilot enterprises which may play a role in developing EMF's.

The reader must understand that those characteristics are not fixed and applicable for all farms around the Sendaba Valley. Within the two farming styles a lot of similarities exist amongst the farmers but at detail level there are significant differences (e.g. access to water, use of new technologies, investment climate, and connection to the government). In the remainder of this report the two different farming styles are described by their different characteristics. Economical multifunctional farmers are abbreviated with EMF and specializing dairy farmers with SDF.
# **Chapter 4 – Economical Multifunctional Farming**

This chapter gives voice to the strengths and weaknesses of the economical multifunctional farmers around the Sendaba Valley. Not only EMF's strong and weak characteristics, but also heterogeneity, social embeddedness, future perspectives and external influences from e.g. the government and foreign investors are described in order to connect them to the agro-ecological paradigm.

I recognized that 92% of the farmers in and around the Sendaba Valley are economical multifunctional farmers. As will be evident they have clear characteristics of peasants. The other 8% are specializing dairy farmers, which are described in the fifth chapter of this report. Taking the agroecological paradigm, elaborated in chapter in two, as starting point, it is clear that EMF is an old but effective farming style, based on local knowledge and practices. Despite its rich history of farming, multifunctional farming has an uncertain future. Agro-industrialists argue that EMF's should move to a closer relation to markets, external knowledge and resources outside the farm, implicitly indicating that EMF is not adequate enough to perpetuate themselves for future. My argument is that multifunctional farming should be supported and sustainably developed from the inside rather than the outside, something that I will clarify by describing the strength and potential of the EMF's around the Sendaba Valley. The terms 'peasantry' and 'economic multifunctional farming' are used mutually. The first term refers to an agricultural process and analytical frame of the second.

# Introduction in economical multifunctional farming

Two characteristics stress economic multifunctional farmers in general. Firstly a high level of autonomy and independency of the markets regarding mobilizing resources as inputs of their farms and secondly their focus at different activities rather than specializing on one activity. By conducting multifunctional activities, EMF's economically spread their risks and increase their chances of a stable income. Multifunctional farming theoretically does not say anything about the scale of farming; this farming style is applied at both larger scale and smaller scale farms.

Most of the EMF's are family farms, at which agriculture is the most common sources of income. The farms are often not large, but several activities are conducted. The most important are livestock breeding, crop production and eucalypt production, beside the production of e.g. honey, eggs and residual products. Farmers are often not benevolent towards changing their agricultural behaviour, but they try to maximize their main activities. Although there doesn't seem to be a lot differences between the EMF's at first sight, different farmers indicated that there is a lot heterogeneity amongst the EMF's.

"Heterogeneity amongst the farms is very good for some reasons. It stimulates growth, development and competition leading to increased quality. Farmers complement and amplify each other through diversification. Diversification at the farm levels positively leads to diversification at market level." – Girma, farmer in Warka Kore

# Mobilization of resources

This chapter examines the three storylines (mobilization of resources, conversion and enrichment of resources and commercialization of end products, see chapter 2) in the case of EMF. The mobilization of resources is described in the following paragraph through the access to and the purchase and control of the resources. The way farmers obtain and enrich their resources differs and this difference is interesting in order to describe the farmer's autonomy and relation with the markets. Also the way knowledge is constructed is elaborated. The enrichment of resources and commercialization of end products by EMF's are described in the other two paragraphs.

#### Input and control of resources

Most of the EMF's in the area of Sendaba are quite autonomous by producing the largest part of their own input. This process of non-commoditization is a sustainable way of resource mobilization since it is cheaper to produce the own input instead of buying it at the market and since it increases the ability to control resources. From my survey, it evidently appeared that EMF's produce 72% of the seeds for crop production and 83% of the feed for the cattle at their own farms. Approximately one quarter of the input is bought at the market. Also the input of tools, food and compost is mainly derived from the own farm. This is in line with the agro-ecologist statement of van der Ploeg that agrarian progression most importantly must happen through a process of non-commoditization because of the enriching element within self sufficiency. The fact that the EMF's in the Sendaba valley have a high degree of self-sufficiency seems to be a result of the EMF's as being 'homo economici', meaning that the decisions of the farmers are grounded on economic perspectives.

Although self sufficiency is sustainable, still it is preferable that the agricultural production of the EMF's rises in future to increase revenues. The agro-ecologist perspective aims at increasing production by strengthening local knowledge and practices instead of an increasing role of the markets, which increases the sustainability of the production process and certainty of resource mobilization. Agro-industrialists argue that an inflow of external modern resources is inevitable to increase the EMF's production. The inflow of external resources, however, increases the EMF's difficulty to obtain and control their resources. As a result, they have to engage in a process of negotiation with markets and institutions, which means that their mobilization of resources is getting complicated and out of their control. Often the prices of the resources offered at the market, like selected seeds, concentrates and fertilizer, are quite high. Despite the yield increasing opportunities, several farmers confided that they cannot afford to buy those inputs. Only a little percentage of EMF's tries to innovate their inputs through a strict and sparse selection of few external inputs.

There are some problems inherent to dependency to markets. Since more farmers start to use technologically improved resources, sometimes the availability of some resources like fertilizer becomes more uncertain. Commoditizing farmers are dependent to market prices, which are often both unstable and increasing. The result is that, although farmers sometimes have the attitude to buy more production enlarging resources at the market, they are discouraged to commoditize. To increase their independency and to protect themselves from the erratic functioning of the markets a significant part of the EMF's stays sustainably non-commoditizing.



Herewith it is important to mention that not all EMF's have the same strategies. They have different ratios between the use of internal and external resources; between the development of livestock and production of crops; and between the degrees of self sufficiency. The farmers who commercialized their outputs most were characterized with more difficulties to obtain new inputs via the market.

Several farmers mentioned that harvest shocks, due to changing and unpredictable climate circumstances, uncovered the vulnerability of being self sufficient to a large extent. Farmers who generally produce their own inputs have more difficulties to buy vicarious input at the markets in the

case of harvest failures since they were not prepared to have savings available. Those farmers have problems to produce enough feed and seeds for the next year.

# **Capital and financial means**

Besides a weak and devious functioning of the markets, also a lack of capital impedes the EMF's to buy resources at the market. Prices are often high and modern inputs are expensive. To increase their financial means, EMF's often have external jobs and in some cases they are being supported by remittances from children who have found work in larger cities like Ambo and Addis Abeba. Farmers who have a saving attitude and who have access to external resources of money appear to be more likely to buy input at the market. To increase the purchasing power of the EMF's, the government supports the farmers financially by providing capital and creating a climate in which the banks, which are highly state-controlled, easily provide micro-credit budgets with low interest rates.

# Important resources

The most important resources of the farmers are, as showed in figure 5, water (90,6%), land (87,0%) and feed (82,6%). Water is indicated most frequently, although feed is mentioned a third times more as the number one important resource. Land also appears to be an important resource, although it is most often indicated as the third important one. The use and enrichment of the different resources are elaborated in more detail in the following paragraphs.



# **Construction of knowledge**

Knowledge is an important resource that determines the way farmers deal with tangible resources. The agro-industrialist perspective on EMF's knowledge is that it is often traditional and inadequate to upgrade themselves to modern and productive farmers. Where this vision pleas for an inflow of external knowledge on modern farming, my argument is that EMF's indeed have a lot of knowledge how to use and enrich their resources, as evidenced by the long history of multifunctional farming. The question is not how local farmers should receive or construct external knowledge, but how outsiders should use local knowledge in the process of agricultural development from the inside out.

Although lot farmers around the Sendaba Valley are illiterate, they have a lot practical knowledge on how to produce crops and eucalypt wood and take care for the cattle. They might not know the volume of 'one litre' or how to increase dairy production, but they have proven to perpetuate themselves since decades. Their main problem is that they seem to have difficulties to not only perpetuate themselves, but also upgrade their farms to higher levels. From an agro-ecological perspective, the most sustainable way of supporting this process is to take local practices and knowledge as starting point rather than external knowledge. To do this properly, it is important to identify how knowledge usually is constructed amongst the EMF's around the Sendaba area. In general, there are two common ways of knowledge construction: a traditional and a modern one.

### Demonstration knowledge construction

This way of knowledge construction is quite an old and traditional way of knowledge construction that has occurred since centuries. Farmers construct knowledge through their own and others experience. They just try which strategies and practices work best before they regularly apply it. Other farmers look around at each other's farms, talk and discuss with each other and copy each other's agricultural behaviour. Regular community meetings to discuss agricultural issues contribute to the development of agricultural knowledge. Knowledge is divided by sharing; between farmers and between father and son. If one strategy appears to be profitable, other farmers mainly copy the successful strategy.

# Expert knowledge construction

In each village there is at least one agricultural expert who gives advices and trainings on farming and crop producing practices. Those experts are mainly paid by government and are part of the government's policy to change traditional farming into 'modern farming'. The experts often work together with veterinarians. Not only expert knowledge from the government, but also foreign investment farms play a role in the inflow of external knowledge. A Chinese agricultural research institute located at the verge of the Sendaba Valley is one example of external knowledge construction. Around 70 local farmers are being trained weekly at this centre. They get trainings concerning plant and crop production techniques. Besides offering trainings, the centre also provides improved seeds to increase the production of the farmers. The centre seems to be supported by part of the community due to its improved techniques and the supply of jobs. Another part questions its added value: "although foreign investors bring new ideas and practices to the traditional ways of farming, I don't want to change my thoughts and continuously re-discuss my own practices" (Girma).

The first mentioned way of knowledge construction through observing and copying causes both heterogeneity and a move towards similarity. Heterogeneity appears because some prominent farmers decide to try new practices. It appears that farmer's attitudes towards constructing and developing knowledge differ. As several farmers argued, always the same farmers take the lead to change and others follow. Because of the tradition to copy each other's successful behaviour, differences in concrete practices vanish and most of the farmers again move to similar practices. The specializing group of dairy farmers is an exception on this move to similarity since they radically change their practices. This is elaborated further in chapter five.

# Change and reproduction

The last few years there has been a change of the nature, use and origin of resources. An increase of innovative external technologies has changed the landscape of agriculture. During my interview with Kabede, an agricultural worker from the government in Warka Kore, he mentioned that, beside the traditionally used resources, currently the most important resources of the EMF's are herbicides, insecticides, pesticides and fertilizer. He discovers a moment of change in which the farmers are changing their traditional resources to more modern resources. They however indicated that they still do not use modern inputs on a regular and large base. The third change that has happened the last years is the way people get access to the resources. Where in the past most inputs are internally produced at the farm, actually an increasing amount of resources are bought at the market, making the EMF's more dependent to the markets. This process is causing a countermove of the farmers

back to their farms in order to generate their own inputs. There are indications of increasing commoditization, but yet the farmers still remain highly self sufficient and focussing on reproduction of their resources.

It is clear that this change of the nature, use and origin of resources also requires a change of mindset and a development of knowledge on how to use the certain resources. Some farmers who I spoke with argued that although the availability of modern resources has increased, their opportunities to efficiently and properly use the resources are still the same as years ago. This statement has been stressed by the farmers who all mentioned different ways of using fertilizer and herbicides. Not only accessing innovative technologies falters, but also knowledge on how to use them. This again pleas for development based on local practices rather than on external input.

While observing and interviewing different farmers, it struck that there are a lot of differences amongst the farmers with regard to the use of new inputs. The most important reasons behind this heterogeneity are high prices and the uncertainty of the actual profits of using new inputs. Most EMF's are watching the way the wind blows; they first need evidence from other farmers that the use of those devices indeed is profitable on the longer term.

# **Conversion and enrichment of resources**

Going beyond the mobilization of resources, the way EMF's convert and enrich their resources into end products is elaborated in this paragraph through a description of the objects of labour, tools and instruments and the labour force with respect to the different activities at the multifunctional farms. This paragraph narrates the story of how farmers add value to their input in order to augment revenues with their output. Also the way EMF's try to increase the efficiency-maximizing relation between input and output, the I/O relation, is explored.

**Objects of labour** are "those things that are converted into new values" (van der Ploeg, 2003, pg. 102). In other words, objects of labour are the specific resources that are being transformed into a new or end product. Within this transformation a process of enrichment is happening. **Tools or instruments** are "those elements that are fabricated and used to lighten and improve the labour process" (van der Ploeg, 2003, pg. 102). Those tools or instruments both concern traditional and innovative tools as well as modern supplies that increase production. The **labour process** refers to all labour that is needed within the process of production.

The different activities go through varying processes of production. The most common activities at the EMF's are livestock breeding, crop production and eucalypt wood production. Other money raising activities are the production of eggs, wool, coats and honey. It differs from farm to farm, but generally crop production is seen as most profitable by 72% of the farmers, although some farmers also mentioned that cattle and crop production are interrelated to each other since oxen are used within the production process of crops. Crop production is seen as more profitable due to their profitable marketing and non-commoditization opportunities.

# Livestock breeding

EMF's mainly have a varying livestock, of which cows, bulls and oxen are the most profitable. Sheep are the most prevalent. Donkeys and horses are used for transportation purposes. From the survey it appears that farmers on average have 3,2 cows, 1,6 bulls, 2,2 oxen, 8,5 sheep, 1,8 goats, 7,7 chickens, 1 horse and 1,4 donkeys. Most of the cattle are from local races, although it appears that farmers and particularly the government try to crossbreed them with more productive races. It struck that the cattle is often quite good-looking with respect to their physical features. Some of them even have a too large fat content according to a veterinarian I spoke with.

Breeding livestock has different purposes. The most important one is fattening for sale. Farmers breed their own calves, fatten them and sell them at the market. The second purpose of cattle is using their power to do heavy work at the farm. The oxen are sold at the market when they are too old. The third purpose is the production of milk and dairy products like yoghurt, butter and cheese.

#### **Objects of labour**

Examples of objects of labour with regard to livestock breeding are feed, water and small calves.

#### Feed

From the needed feed at the EMF's, 83% is produced at the own farms and only 17% of the feed is bought at the market. The feed that is produced at the farms is mainly derived from the production of different cereals like teff, sorghum, barley and wheat. This feed is supplemental to the feed eaten by grazing around. Livestock of the farmers grazes around at commonly used grasslands by day, and stays at the compounds by night. Although the commonly used land doesn't belong to the farmers, they see it as property of the community rather than the government.

Only some EMF's buy some feed at the market, which often concerns concentrates for the cattle. Two types of concentrates are being sold: one for fattening and one to increase the production of milk. As described in the fifth chapter, the latter is barely bought by EMF's, which stresses their low priority on dairy production. Both types of concentrates have a price of 375 Birr per quintal. The concentrates for fattening is an agro-industrialist successful example of markets as resource distributors. An increasing number of EMF's is buying those concentrates at the markets, and most of them indicate higher revenues directly following from the usage of concentrates.

Buying feed at the market is devious for EMF's due to high transportation costs and a weak infrastructure. The poor accessibility of the markets is one of the explanations why EMF's have low incentives to attend markets as source of inputs. At the same time, several farmers mentioned the increasing importance of markets to distribute feed of more quality to increase the production of meat and milk and decrease the chance of malnourished cows.

### Water

Most drinking water for the cattle is taken from the river. While the cattle are grazing around at the fields by day, they are herded to a river two or three times a day.

### Small calves

Breeding calves and other young animals could be seen as objects of labour since they themselves are fattened to sell them as output. Only a small amount of the EMF's crossbreeds the livestock with external productive races like the Frysian Holstein. This is more regularly done by the specializing dairy farmers, who are elaborated in more detail in chapter five.

#### **Tools or instruments**

Examples of tools or instruments with regard to livestock breeding are hand tools, concentrates and veterinarian services.

### Hand tools

Most of the work is done by hand or simple tools which are manufactured at the farm. Homemade rods are used while herding the cattle and simple buckets bought at the market are used for milking.

### Concentrates

Concentrates are an important way in which farmers the last few years have tried to enrich the meat production of the cattle. Arassa told me that, regardless the high prices of concentrates, an

increasing amount of farmers is supplying concentrates to their cattle since they have noticed at other farms and experienced by themselves that this investment increases revenues in future.

# Veterinarian services

The veterinarian service system in Ethiopia is well organized due to efforts of the government. Veterinarians are educated and have a lot of knowledge. They are easily accessible for all farmers. In many villages farmers have access to veterinarian services like insemination, counselling and vaccinations. Those services are of low price. Insemination and vaccination mainly cost around 5 Birr and counselling is usually free of charges. Some problems occur within the veterinarian system as the farmers mentioned. Vaccinations are not compulsory or given preventively but are mainly administered only after recognition of the disease. This is because of economic reasons and the availability of the vaccinations and might be considered as a weakness. Veterinarians are also often busy and their work pressure is high which is having influence on their availability.

# Labour process

The required labour within the process of livestock breeding is not intensive at most farms noticing that the EMF's focus is mainly on the production of crops. Livestock breeding is an easy additional money raising activity without the need of putting too much effort in it. Three main labour processes are important: herding, milking and washing the cattle.

# Herding

From early in the morning until the evening the cattle graze around at the common used fields which are property of the government. This requires some herds who guide the cattle. Those herds are mainly younger children of the farmers. After returning to the farms, the children prepare the cattle for staying the night in the barn. Only one farmer I met had some cows from the Frysian Holstein race which stay at the compound the whole day.

### Milking

Every day the cows are being milked. This is mostly done once a day. Milking is especially a task which is culturally assigned to women. On average, farmers milk around three cows. Most of the cows only give around 1 litre milk each day, with a ceiling height of 3 litres, which is internally consumed within the farm. Milk is mainly not seen as a marketable product by the EMF's. In some cases, milk is being processed into butter, yoghurt and cheese which are sold at the market.

### Washing

Most of the farmers wash their cows each day. This is because they have learnt to work hygienically at several trainings offered by the government. They argue that cleaning the cows will contribute to the whole well being of the cows.

# **Crop production**

The process of crop production is the most intensive and profitable process at most EMF's. They produce a lot different crops, with a distinction between cereals as feed for the cattle and vegetables. The cereals that are produced are teff, sorghum, wheat, barley and also some maize, hay and grass; the vegetables that are produced are tomatoes, potatoes, beetroots, onion, cabbage, pepper, garlic, beans and carrots. It struck that there is only few differentiation amongst the kinds of produced crops. Most of the farmers more or less produce the same products. Only some farmers try to differentiate the type of crops they produce in order to create some market heterogeneity which increases their revenues. The production of vegetables requires more intensive supply of labour and water than the production of feed for the cattle. However, the revenues from vegetables are significantly higher than the revenues from the crops like cereals.

The production of crops has different purposes. The most important purpose is to provide own inputs as much as possible in order to reach a high degree of self sufficiency. This decreases the costs of buying additional feed. The outcomes of the survey show that around three quarters of the input of the farms have been derived from own production. EMF's produce the largest part of their required seed input. Several EMF's produce more feed than is needed at the farm, which means that they sell the remainder of the production which is not used at the market. With regard to the production of vegetables, it is clear that the largest part of the vegetables is not used at the farm but sold at the market. The sale of vegetables is according to all farmers very profitable, although being independent to the market regarding the input of feed due to own production also prevents the farmers from high indirect costs.

The production of crops is subjected to several problems. Several EMF's argued that they face a too small productivity from their fields which is caused by factors of low quality seeds and failing harvests caused by both climate fluctuations, frost and soil degradation, preventing them to increase production for following seasons.

# **Objects of labour**

Natural resources as objects of labour are land, water, seeds and organic fertilizer.

# Land

The owner rights of land have always been topic of debate in Ethiopia. The government is owner of most of the land in Ethiopia. Sometimes the farmers get user rights of certain pieces of land at surcharge, but even in this case the government stays the owner. However, when land structurally has been used by ancestors, it might be valued as own property, although it officially never belonged to the farmer's family. This often creates tension between local governments and the farmers. As displayed in figure 6 most of the farmers personally use around 0,5-3 hectares, which is 2,6 hectares on average. On those pieces of land, the compounds of the farmers, including buildings and small kinds of crop production, are established. The soil around the Sendaba Valley has a high natural fertility, but its largest constraint is a lack of supply of water.



Access to land, as resource for feeding cattle and producing crops, is an important determinant of the farmer's ability to be self sufficient or not according to the following farmers.

"For future, land will be my most important target of investment since this determines my ability to be self sufficient." – Kabede, EMF in Awash Bole "I am self sufficient to a large extent, but I do not have enough land to produce all the needed crops, which forces me to rent additional land." – Girma, EMF in Warka Kore "My largest threshold to grow as a farmer is a lack of land. I need to move to another place to get more land and raise production." – Ebisa, EMF in Garera

Although the appearance of crop production at the different pieces of land seems to be quite unstructured, one member of the cooperative in Ginchi argued that one of the largest improvements

regarding crop production the last few years has been the (re)distribution of the different pieces of land to different farmers in order to increase efficiency. The lands and their boarders have become more straight, as well as the lines of the crops themselves.

Differences in the farmer's abilities to rent and cultivate land cause heterogeneity amongst the EMF's. Several EMF's mentioned that they have difficulties to be self sufficient or to increase their production due to a lack of land. When financial means are available to rent additional land, farmers differentiate themselves with higher yields and less dependence to markets to obtain resources. Sometimes, farmers mutually make special arrangements to use land that is close to a source of water. Both farmers use of the same piece of land, but the one farmer provides the land and the water and the other farmer provides the seeds, fertilizer and other devices. The input of labour and the share of revenues are equal. Without making any special arrangements, the price of renting a piece of land of 0,25 hectare is around 1000 Birr per year.

Beside the practical value of land, it also has a large spiritual meaning. Farmers believe that the spirits of their ancestors are still living in the open lands and therefore the land must be honoured and well used by local people, which partly explains why locals have a suspicious attitude towards foreign investors using pieces of land that were seen as common good before.

# Water

From the survey it appeared that 90,6% of the farmers mentioned water as one of their three most important resources. Farmers need drinking water for their households and livestock, which is mainly derived from the river. The lack of clean drinking water causes serious health problems. Because of the importance of water, farms are as much as possible built close to natural sources of water.

The availability of and access to water turns out to be a crucial factor that determines the extent to which farmers are able to produce crops. Farmers who are not able to derive water from a natural source close to their farms, harvest mainly only once a year, being dependent to rainfall during the rain reason. Other farmers who have a lot of water available are able to harvest two or three times a year, which definitely increases their revenues. Diverted water for irrigation purposes is particularly used to improve the growth and quality of crops, and not to improve the quality of the grass.

The scarcity of water forces the farmers to be creative on the use of water and shows the farmer's elasticity. Where some farmers acquiesce in being dependent to the rain season, other farmers found inventive ways to irrigate their crops. In some cases, water has been derived from rivers to supply to the crops by digging small dices. At some places I also saw motorized water pumps to transport the water down from the river up to the fields. Close to the Sendaba Valley, there is another valley called the Green Valley. During my visit, it immediately struck that farmers were able to harvest a lot different crops several times a year. It appeared that the farmers in this valley had a lot of water available due to different natural water springs and they had inventive ways of effectively using those resources of water.

Farmers in the Green Valley only focus on crop production. They do not have a lot of cattle; the cattle they have is just used for heavy work at the fields. The availability enables the farmers to harvest three times a year. Everything in this valley is aimed at controlling and giving direction to the flow of water. The water is coming from different springs in the mountains. The farmers have made a water management policy by themselves on how to use the water. They have dug a lot dices to guide the water efficiently to the acres of the different farmers that are living in that area. By interval, the farmers get water turn by turn. Each farmer gets enough water to irrigate his crops. The larger the farmer is, the more water he receives from the common source.

# Seeds

As shown before, 72% of the used seeds at the EMF's are derived from previous harvests and used as non-commodity input. Only 28% of the seeds is bought at the market. Those seeds are called 'selected seeds' and are developed by research institutes of the government in the context of their rural development policy to 'change traditional farming into modern farming'. Those seeds are quite expensive, with the result that mainly the richer farmers use them. Although most of the EMF's recognize that the improved seeds improve productivity and efficiency, they cannot afford to buy them regularly.

Regardless the influence of the government in developing seeds, a lot of farmers complain that there is a huge shortage of cheap and efficient seeds. To trigger own initiatives of the farmers to produce seeds of more quality, the agricultural office in Ginchi has established a 'seed quality control laboratory' where farmers can check the quality of their seeds for free.

# Organic fertilizer

From history, compost is seen as the most important fertilizer. Although actually the use of modern fertilizer has been increasing, still most farmers supply natural compost to the crops. This appoints to the farmer's attitude to stick to traditional resources rather than to modern ones.

# **Tools and instruments**

The production of crops has been improved the last few years by some new tools that enlighten the labour process and increases production. Examples of new tools are water pumps, fertilizer, herbicides, insecticides and pesticides and selected seeds. Although these modern tools are proven to increase productivity and revenues in some cases, they are still facing some problems: high prices, a lack of knowledge on how to use them appropriately and a lack of trust in their actual profits. Tools and instruments with respect to crop production are hand tools, water pumps, fertilizer, herbicides, pesticides and insecticides.

### Hand tools

Traditional hand tools manufactured by the farmers themselves are the most used. Ploughs are self made and pulled by oxen to plough the land. Some different tools and buckets are used for weeding, harvesting, storing and transporting the crops. In some villages there is supply of electricity, but this is quite unstable. In the rural areas there is not any supply of electricity, which is a constraint for the farmers to e.g. use electric tools or store milk in a cold place. They also have a lack of money to both purchase and maintain modern tools or to buy fuel that is needed for motorized tools. As will appear in the following section, a motorized water pump is an exception in some cases. Furthermore, farmers often lack knowledge on how to properly use and maintain modern tools.

### Water pump

In some cases I noticed motorized water pumps to derive water from rivers to irrigate the crops. Since several farmers profit from this pumps, they are often purchased and used by the community.

### Fertilizer

Fertilizer is a modern tool to increase the production of the crops. It has been developed the last few years under influence of the Ethiopian government. Although fertilizer is expensive (around 1200-1400 Birr per quintal), an increasing amount of farmers uses it. Some EMF's who financially can effort to buy the fertilizer experienced that this investment results in higher production and revenues; others cannot afford or are too afraid to invest in the relatively expensive fertilizer. What struck is that there is a lot difference amongst the farmers on how they use the fertilizer with respect to the moment and amount of supply. The farmers mentioned that they often but just do something without having the needed knowledge to use the fertilizer properly.

### Herbicides, pesticides and insecticides

Herbicides, pesticides and insecticides to increase efficient crop production and decrease the chance of failing harvests at the EMF's are examples of the agro-industrialist technological innovation that the Ethiopian government and several NGO's have prescribed. Those products can be bought at the agricultural office in Ginchi and are developed and provided by the Ethiopian government as part of the 'modern farming' policy. Although there is an increase of its use, most EMF's cannot afford to buy those inputs; only the richer farmers (e.g. SDF's) have the money to invest in them. Not only the *high prices* of these inputs are restrictions to buy them, but also a *lack of knowledge* on how to use them and a *lack of trust* in their actual additional profits play a role in farmer's decisions to buy those modern inputs or not. Fertilizer in some cases also has a negative influence on the quality of the soil.

The availability of the before described modern tools at the market has some important implications. It appeared that those tools have increased the productivity at the farms. Though, their use also entails an increase of inequality and heterogeneity at the EMF's level. Only a small group of farmers can afford to buy them giving them a better competition position. The prices of the tools are high and their availability at the markets falter. EMF's who buy the tools at the market become more dependent to the functioning and prices at the markets. As a result, their autonomy decreases. The EMF's don't have enough knowledge to use them efficiently or properly, which in the case of chemicals also might cause serious problems to the soil and the crops.

# Labour process

The required labour processes regarding the production of crops are compared to those of livestock breeding quite intensive. Within this paragraph, both the type of labour and the way this labour is organized are elaborated.

# Labour activities

The process through which crops are produced is mainly intensive and complex. It requires a lot of knowledge to do this properly.

- 1. **Ploughing land**. All the ploughing is done by using oxen. The ploughs themselves are homemade. Most farmers plough the same piece of land around 3-5 times before sowing the seeds. Most farmers indicate that the soil is very fertile.
- 2. **Digging dices**. Farmers who have an irrigation system beside the natural supply of rainfall have to dig small dices to give direction for the water flows. This work is done by hand.
- 3. **Sowing**. As already mentioned, most of the seeds are derived from previous harvests. Only a small part of the seeds are selected seeds bought at the market. Seeds for cultivating vegetables are all bought at the market.
- 4. **Supplying water**. Again, the farmers who have an irrigation system have to supply the water.
- 5. **Supplying compost or fertilizer**. All farmers supply compost to the crops. Only some richer farmers can effort to buy the fertilizer. All farmers mentioned that this indeed increases productivity of the crops.
- 6. **Weeding**. When the crops start to appear, the farmers start weeding the soil. This is done for around 35-40 days. Most part of the weeding is done by hand, only few farmers use chemical tools.
- 7. **Removing bad crops**. Together with removing the weeds, bad or dead crops are being removed to give more space for the others.
- 8. **Supplying compost or fertilizer**. Again, fertilizer and compost are supplied.
- 9. **Harvesting**. Farmers who have the ability to supply fertilizer and other innovative tools and who are able to supply additional water to the crops harvest around 3 times a year. Harvesting is done by hand; transportation is mainly done by donkey.
- 10. Threshing. After harvest the cereals must be threshed. This is done by using oxen.

- 11. **Separating cereal and straw**. After having threshed the cereals, the wheat must be separated from the chaff. This is a very precise work that is done by hand in conjunction with wind. This must be done around 5 times.
- 12. Sale of crops. End products like wheat and vegetables are to be sold at the market.

# Division of labour

Farming in Ethiopia definitely is a social group process. As mentioned in chapter three, the EMF's are family farms in which most family members are having their own tasks. From the survey it appeared that households often exist of 6-8 persons, of which approximately 3 are male labourers and 2 are female labourers. From the survey it also appeared that 87% of the people who are doing work at the farm (both the paid and the unpaid) are full time involved in the labour process at the farm. Especially in the rural areas, children often don't go to school because they have to contribute to the daily practices of the farms. Some richer EMF's have external paid labourers, of which most are daily labourers instead of contract workers. The paid labourers are often doing the heavy work at the farm and are only hired in specific times of ploughing and harvesting. Several farmers told me that although they don't have paid labourers, still they receive external help from other farmers. It is normal that in times of heavy workload farmers help each other like a friend's service. One time a farmer receives help from his neighbours, another time the farmer has to give help to his neighbours, preventing each other of high labour costs. Especially people from the same village or religious background support each other.

Beside the labour of human beings also cattle power is much used to enlighten the needed labour. Oxen are often used for ploughing and threshing, while donkeys and horses are used for transportation. Bulls are often made infertile to keep them more quite for doing heavy work.

Within the division of labour, several tasks are culturally gendered. In general, men are responsible for the work outside the compound and the women are responsible for the work inside the compound. Examples of men tasks are ploughing, threshing, weeding, herding, digging, harvesting, selling cattle at the market and optionally engaging in additional jobs. Specific tasks for women are taking care for the children, preparing food, getting water, additionally feeding the cattle, cleaning crops, milking and other light work that must be done at the farm. Furthermore, women support the men in doing the heavy work when needed. Even at the market there are gendered tasks: men are busy with selling and buying cattle, while women take care for selling and buying crops and vegetables. The children also do some light work at the farm and they are mainly responsible for herding the livestock by day.

# **Eucalypt production**

Most of the farmers around the Sendaba Valley produce eucalypt trees. Several EMF's argued that the production of eucalypt trees is one of the most profitable activities at the farms. Those trees easily adapt to dry circumstances, grow fast and are structurally used in Ethiopia for several purposes. Within three to five years, the trees are large enough to cut them down, although they are mainly sold after two or three years. They can easily be sold at the market since there is a lot demand for eucalypt wood. Eucalypt wood is also used internally at the farm for different purposes. It is used as fuel to make fire and to cook and for constructing buildings and fences around the compound. Depending to the amount of produced eucalypt trees, yearly profits of eucalypt wood can be up to around 10000-15000 Birr, which is comparable with a year salary of a daily labourer.

# **Objects of labour**

The production of eucalypt wood doesn't require a lot input. Only fertile soil and cuttings to be planted are needed. Those cuttings are bought from other farmers or derived from previous harvests. Although the production of eucalypt wood is profitable, it also causes serious harm to the

soil since it degrades the level of minerals to a large extent. Because of this reason, the government is implementing restrictions on the production of eucalypt wood. Most EMF's recognized the negative results of producing eucalypt wood. Yet, they feel forced to keep on producing them since they need the wood at the compound for fuel and construction and since the profits on the short term are too high to stop the production because of it negative effects on the long term.

# **Tools or instruments**

Apart from tools to prepare the soil and cut down the trees, no tools or instruments are needed. The needed tools are homemade traditional hand tools.

# Labour process

The labour process of eucalypt trees is not intensive. The farmers have to prepare a certain piece of land, dig some dices and plant the cuttings of the trees. There is not much maintenance work required to produce the eucalypt trees. When the trees have grown large enough, they must be cut down and small twigs and the bark must be removed. After having cut down the trees, farmers do not have to plant new cuttings because from the remainder stump new eucalypt trees will be grown.

# **Enriching the enrichment**

After having explored the way the EMF's around the Sendaba Valley give shape to enriching resources by transforming their input into output through a process of production, the question raises how they try to improve and increase the productivity of this enrichment. Since we know that the farmers must be seen as homines economici, we can assume that they somehow try to increase the efficiency and amount of the profits. When I asked the EMF's how they try to improve their production some different answers were given, which showed a lack of clarity of most of the farmers on how to improve their process of enrichment. A lot of farmers gave answers like 'by doing', 'by working hard', 'by using modern systems', 'by using new agricultural inputs' and 'by using technologies'. Those answers show something about the EMF's *incentive* to increase production rather than about the *way* they try to improve their production. What appeared is that farmers don't always have clear ideas on how to structurally improve the enrichment process. Farmers only change their behaviour and copy other behaviour when they actually see that other agricultural practices are indeed more profitable.

Only a small group of farmers seems to have an incentive to develop and innovate, which might be understood by taking the generation gap earlier identified into account. Some EMF's are in a never ending search of improving and increasing the process of production while others just keep on practicing like they have always done. Several farmers mentioned this difference in mindset as one of the most important factors of heterogeneity amongst the farmers. Reproduction processes are particularly identified within the process of developing new seeds from harvests. This is also the case with regard to the production of feed for the livestock. Coproduction, as a result of diversifying outputs of the production process has not been recognized around the Sendaba Valley. Most of the farmers only produce general end products.

# **Commercialization of end products**

This paragraph contains an elaboration on the way EMF's around the Sendaba Valley commercialize their outputs or use it as new input at the farm. Where the previous two paragraphs were concerning the mobilization of resources and the way those resources are being converted and enriched into output, this section identifies what the EMF's do with their output. Firstly, notions on the sale of products at the markets are drawn; secondly, the process of non-commoditization is explored; and thirdly, dynamics of saving and investment strategies are described.

# (Non) commoditization processes

#### Flows of commoditization

A significant part of the EMF's output is not sold at the market but non-commoditized as new input at the EMF's. From the survey appeared that 70% of the crop production is used at the farm as feed for the cattle and only 30% is sold at the market. The products are being commercialized in different ways. The most common way is by selling it at local markets. Other products like eucalypt wood are produced by contract and are retrieved at the farm. Furthermore some farmers sell their products to governmental institutions or foreign companies who buy it as feed for the cattle.

The EMF's produce different kinds of marketable products like crops (cereals, maize, vegetables), eucalypt wood and its bark, eggs, honey, coats, wool, manure and tella (local produced beer). EMF's find many different activities by which they earn money; e.g. even manure and mud are sold at markets for fuel or construction of barns. EMF's mainly do not produce dairy products like milk, butter, yoghurt, cheese to sell at the market since the production and sale of dairy products is subjected to several complications which are described in the following chapter.

It is remarkable that particularly vegetables are sold at the market and that the largest part of cereals and maize is used at the farm. The sale of vegetables is indicated by a lot EMF's as most profitable since their market prices are quite high. At most farms, almost all produced vegetables are sold. Examples of sold vegetables are tomatoes, potatoes, beetroots, onion, cabbage, pepper, garlic, beans and carrots. Also cereals and maize are sold, but the EMF's mentioned that they first calculate how much they need at the farm before they sell the remainder. It regularly happens that almost all the feed for the cattle is needed at the farm, resulting in only small amounts of crops sold at the market. Cereals and maize are clearly produced to be self sufficient.

Not only crops, but also the sale of livestock is an important way of generating income at the EMF's. As mentioned in the chapter before, small calves are seen as objects of labour, like input being converted into output. Average prices of cattle sold at the market are as follows estimated by locals: horse, one year old: 1000 Birr; horse, four years old: 15000 up to 25000 Birr; calve: 2000 Birr; bull: 10000 up to 25000 Birr; cow: 15000 up to 25000 Birr; oxen: 10000 up to 20000 Birr; chicken: 150 Birr; sheep: 800 Birr; goat: 500 Birr. Those prices depend to the age, size, fat level, race and health.

### The physical market

Most of the EMF's mentioned that they sell their products at the markets in Ginchi (Monday and Thursday) and Warka Kore (Wednesday and Sunday). Only few farmers attend markets in Ambo and Addis Abeba. Warka Kore is the closest village with a structural small market in the Sendaba Valley. A larger market in the surroundings with a regional function is found in Ginchi. Ginchi is a large city seven kilometres away from the Sendaba Valley. The farmers go to this market by bus, horse or walking, depending on the kind of the products that are to be traded. High costs of transportation subvert the importance of well accessible markets

The Thursday market in Ginchi seems to be the most important place to trade agricultural products. Farmers from a wide area come to Ginchi to trade their products. The market has different segments. There are places for the sale of cattle, feed, seeds, some dairy products and household products. It strikes that in all segments the farmers sell the same products. At the cattle market all different kinds of cattle are sold. When someone is interested in a certain animal, he checks the health and asks advices from one of the market supervisors who are always present. Together with the market supervisor the condition and price of the animal is discussed. After having bought a piece of cattle, farmers must pay a small tax (around 10 Birr). The taxes are cashed by agricultural workers who control the market. At the seeds market, different seeds for the purpose of food and sowing are sold. Farmers indicated that they earn around 300 Birr each market day with the sale of seeds.

Beside the market as an institute for trading agricultural products, it is also a place of social interaction. Farmers meet each other, drink some coffee and discuss a lot of various topics. Both social information and knowledge or experiences regarding agricultural practices are exchanged. At the market in Ginchi there also seems to be a gendered share of tasks. The men are mostly responsible for selling the cattle and the women for selling seeds and household products.

### **Market dynamics**

It often happens that the functioning of the market determines the kind of products that are being produced and traded. The effect of open markets is that producers adjust to practices which are profitable. However, it strikes that most farmers produce the same type of end products. Not the functioning of the market, but the opportunities of the farmers determine which products are produced and sold. Since most farmers have the same opportunities and circumstances, they to a great extent produce the same type of products. Van der Ploeg argues that connecting the production to the demand of the consumers demonstrates patterns of socio-technical networks. However, evidence from the farmers around the Sendaba Valley showed that consumption patterns of demand are not determining the end products at the market. Marketing strategies are fiddling since the farmers do not have clear ideas on how to organize them.

Some farmers argued that diversification of the products at both the farm level and the market level would be beneficial since this enlarges the opportunities to sell the products and since this improves the prices of the products. It seems that the local market is being stuck in a status quo in which there is only small diversification and no price differences. This status quo is also discouraging competition amongst the different farmers because they all wield the same products and prices. Theoretically it might be arguable that this status quo stimulates an increase of quality because farmers might compete on quality, but this is according to different farmers not happening. Especially the local markets must be seen as supply oriented rather than demand oriented.

### Flows of non-commoditization

As mentioned before, 83% of the input of feed and 72% of the input of seeds (the main noncommoditized products at the farms) are produced at the own farms. In the introduction of this section it is mentioned that 70% of the crop production is internally used at the farms. The farmers buy less than one quarter of their input at the farms, which means that they are highly self sufficient. Van der Ploeg describes this high degree of autonomy as a positive token of sustainable farming, since it means that expenses of inputs are minimized. The reason why the farmers are highly self sufficient is both an economic choice for sustainability and a lack of opportunities, meaning that the EMF's autonomy should be seen as both a sign of impotence and a sign of economical efficiency.

This process of non-commoditization determines the producing practices at the farms. The first need of the farmers is to satisfy to their own input needs. Not the market, but rather the needs and opportunities of the farmers are leading in the choices of the farmers concerning which types of crops are being produced. A high degree of non-commoditization prevents the EMF's from having high direct purchase costs, which puts the profitability of the sold products at the markets in perspective. Although the process of non-commoditization appears to be more important than sales at the market, the farmers have different degrees of self sufficiency which causes differences in the amount of output that is sold at the market and the amount of input that is bought at the market.

# Saving and investment strategies

From the survey it appeared that the EMF's on average re-invest 62,3% of their revenues into new inputs of the farm. Figure 7 shows the invest behaviour of the farmers in more detail. Only few EMF's invest less than 50% and most of them invest between 50% and 80% of their revenues. Most farmers indicated that mainly men are deciding what should be done with the revenues.



During my talks with the EMF's, it struck that they had difficulties to define the way they organized their investment behaviour. The following two stories of Alex and Girma show that there are large differences between the farmers concerning their investment strategies. Alex is a young farmer living in the Sendaba Valley. He started breeding his own livestock when he was twelve years old. Actually, he has developed quite a large livestock.

"When I was twelve years old, I bought a few chickens. After I fattened them, I sold them at the market and I bought some goats. I sold the goats after I fattened them, and I bought some sheep. I raised the sheep till they were large enough for sale. I received enough money from the sheep to buy an ox. At this moment, my ox has grown large enough to be sold. I estimate the value of my ox around 14000 Birr. Beside the ox, I was also able to buy some small calves. I am saving the revenues from the sale of the ox and the calves. My dream is to buy a car, because this will give me the opportunity to access markets in larger cities which will definitely increase my revenues."

– Alex, farmer in Warka Kore

Looking at the example of Alex, who started with some chickens and ended up with some cows, it strikes that Alex and his family accurately use revenues as starting point for further investment at the farm. When I asked what the difference is between the farm of Alex' family and the farms of neighbours, which are much smaller, Alex answered that the difference is that his family invests revenues in the farm. When other farmers gain revenues after selling products at the market, they sometimes go to a bar and spend all their money. After returning home, they still haven't earned additional money to invest, and their farm stays the same as before. In line of Alex' story, another farmer in Warka Kore, Girma, elaborated on different attitudes of the EMF's.

"There are a lot different attitudes. The one farmer is progressive and thinking ahead: he is working hard, saving and investing money in new practices that will have impact on the longer term, always searching to gain new knowledge and using different practices. The other farmer is having a stagnant attitude: he drinks a lot alcohol, uses his revenues for bad purposes, not working hard, too lazy to produce enough crops to be self sufficient. He often doesn't have clear future perspectives and he is afraid to change and develop. The structure and appearance of investment strategies are indications for the attitude of the farmer since this shows their willing to develop."

– Girma, farmer in Warka Kore

It clearly appeared that differences in saving and investing behaviour are important factors to describe the development opportunities and degree of sustainability of the farms. Some farmers are consciously looking for efficient and profitable ways of investing their revenues. Other farmers do not have this incentive and are more often vulnerable for income shocks or failing harvests. Saving attitudes and forward thinking are to a large extent congruent to the development pathways of the EMF's. However, most farmers have a short term vision and do not know how to invest or what they want to reach for future. A large part of their revenues is invested to perpetuate their farms rather to ensure an improved and increased productivity on the longer term. Revenues are more often used for household products and the purpose of keeping the farm basically functioning instead of using the capital as an investment for growth and development. A small part of the EMF's uses revenues to invest in fertilizer, selected seeds and modern tools.

Most of the EMF's who have clear future visions aim at developing towards modern and dairy farming, which seems to be influenced by the agro-industrialist perspective of the government:

"For future I want to move towards modern and dairy farming. This means an increase of production on the same amount of land, a focus on milk production, improved ploughing techniques, structural usage of fertilizer, improved seeds and developed knowledge on how to feed the cows and produce the crops most efficiently. I need to build a barn, enlarge my livestock, crossbreed my cows with the Frysian Holstein race and feed them with quality feed."

– Tesfaye, farmer in Garera

# **Concluding remarks on EMF**

# Common characteristics of EMF

It appeared that EMF has been the most prevalent farming style in Ethiopian history of farming and that this style of farming tends to peasantry. The most important characteristics are that EMF's are multifunctional farmers who make economic decisions to spread risks and that they are able to be self sufficient to a high extent. They have a close relation with the nature rather than with markets with respect to the mobilization of resources, although their dependency to the markets seems to increase the last few years. Their households are quite large and their labour process is constructed by family farming since all members contribute to the functioning of the farms. Although this style of farming doesn't theoretically say anything about the size of the farms, EMF's can mainly be mentioned as smallholder farmers. EMF's have a lot of local knowledge about their general practices and this knowledge is traditionally divided by sharing and copying. They are creative and easily adapt to new situations and opportunities, paying attention to the way they deal with the supply of water and their use of new resources. Their tools are often traditional and homemade, regardless the increasing use of advanced tools and techniques like chemicals, concentrates, fertilizer and selected seeds. The largest part of the EMF's production is non-commoditized as new input for the farms. Output that is not needed at the farms is sold at local markets. EMF's are, in contrast to SDF's, not much influenced by external actors like the government and foreign investors.

### Heterogeneity and similarities within EMF

The above mentioned similar characteristics of EMF's do not rule out heterogeneity amongst EMF's. Differences between the EMF's appear at different levels and stages. This heterogeneity shows both creativity and adaptability and encourages diversification, coproduction and growth. The most important difference is the extent to which the farmers are autonomous. A growing part of the EMF's increasingly relies on markets to mobilize resources instead of own produced inputs. Differences in the use of modern resources like fertilizer, selected seeds, concentrates, chemicals and advanced tools result in different levels of productivity *and* different degrees of autonomy. Deviated attitudes towards modernizing and growth also become apparent in different investment and saving strategies

and different attitudes towards receiving new external information. The one farmer is more openminded towards adapting new information, practices and strategies than the other. This difference between leaders, who try new practices, and followers, who only copy proven successful practices, is most importantly visible as a generational gap. There are also differences with regard to natural resources that determine the EMF's activities and opportunities. Farmers who have a lot of water available (either due to natural rain fall of diverting water from natural resources) have significantly more revenues from the production of crops. Also the amount of available land to cultivate and the race of the livestock determines the height the EMF's revenues.

# Weaknesses of EMF

Economical multifunctional farmers appeared to be able to perpetuate their farming practices and incomes, but they seem to have difficulties to develop themselves to higher levels of farming. They lack knowledge, financial means and ideas to reach higher productivity. With regard to dairy production, there is a lack of natural and technological facilities to make dairy production a profitable business. They are not only not able to buy and use more expensive tools, but they also lack knowledge on how to use them appropriately. Because of their close relation and dependency to the nature, they are vulnerable to income shocks and harvest failures. Furthermore, several farmers mentioned that they need more land as personal property to sustain their high level of autonomy.

To conclude, EMF clearly appeared to have similarities with characteristics of peasantry. Since they are apparently able to make themselves a living, but not to significantly increase revenues, it might be argued that they need external ideas and handgrips. However, multifunctional farming should be developed from the inside out rather than from the outside. Their autonomous way of farming and close relation should be sustained. Developmental interventions and new practices should be incorporated within existing local agricultural structures, knowledge and multifunctional practices.

# **Chapter 5 – Specializing Dairy Farming**

The previous chapter elaborated on the characteristics of economical multifunctional farming which traditionally has been the most prevalent farming style amongst the small Ethiopian farmers. The last few years, due to several factors which are described in this chapter, an increasing number of farmers has changed its focus on different activities to specializing on dairy farming. Although the circumstances at both supply and demand side of dairy farming falters, different stakeholders like the Ethiopian government and foreign institutions aim, from an agro-industrialist perspective, on developing dairy production as the most important way of farming for future. This chapter serves to identify the strengths and weaknesses of SDF and its differences compared to EMF by describing the same three storylines as the previous chapter: mobilization of resources, enrichment of resources and commercialization of end products. The purpose is to place SDF alongside rather than opposite to EMF. In the end of this chapter, also patterns of *urban* dairy farming are explored.

# Introduction in specializing dairy farming

As mentioned in chapter four, 92% of the farmers around the Sendaba Valley are multifunctional farmers and only 8% focuses on specializing to dairy farming. Two things particularly characterize dairy farmers. At first they seem to connect themselves easier to markets with respect to their mobilization of resources than EMF's, which implies a lower level of autonomy. At second, they increasingly disassociate themselves from aiming at several activities to specializing on dairy farming.

The development of dairy production is subjected to several problems at both supply and demand side, of which a weak dairy market is indicated as the most important. Although Ethiopia has a lot potential consumers of dairy products, farmers face difficulties to change their small scale milk production into profitable businesses. Consumers, producers, merchants and processing companies are hardly connected to each other. At the supply level a lack of knowledge, cultural constraints, inappropriate resources and difficulties to store and transport dairy products hinder their regular production. These features and problems are analyzed in more detail in the following paragraphs.

### Role of the cooperative in Ginchi

Not only external stakeholders, but also local farmers themselves have recognized the advantages of producing dairy products. In Ginchi, several farmers established a cooperative on own initiative to encourage the production and sale of dairy products. Entrance of the cooperative is free and already 46 farmers are connected to it. They have a small office in Ginchi where they regularly meet and where they trade products and discuss dairy producing practices. The cooperative is not supported by the Ethiopian government, which is remarkable since the government wants to increase the dairy markets in Ethiopia. As some insiders argued, the government only supports larger modern farms rather than small EMF's who want to specialize on dairy production.

The cooperative is established to bring farmers together in a joint front to increase their opportunities of dairy farming and to establish and maintain a healthy dairy market in the area of Ginchi. 'Together we are stronger' is the idea behind their attempts to improve their market position, to lower expenditures, to increase revenues and to stabilize and assure the sale of dairy products. At the same time they try to facilitate the production of milk at the farm level practically by providing trainings, concentrates, a milk collection point and guarantee of milk marketing. The cooperative is also a platform of social interaction to share knowledge and experiences.

"The Ethiopian government defaults to support the Ethiopian farmers who want to aim at dairy production. We actually try to fill the gap between the ideas of the government and the practices of the smallholder farmers." – Establisher of the farmer's cooperative in Ginchi

# **Mobilization of resources**

This chapter examines the three storylines (mobilization of resources, conversion and enrichment of resources and commercialization of end products, see chapter two) in the case of SDF. The changing character of how farmers mobilize their resources is described in the following paragraph through the access to and the purchase and control of inputs. The way farmers obtain and enrich their resources differs from EMF and this difference is interesting while analyzing the farmer's autonomy and relation with the markets. As appears, knowledge is mainly externally constructed amongst SDF's. The enrichment of resources and commercialization of end products by dairy farmers are described in the other two paragraphs.

# Input and control of resources

It appeared that EMF's increasingly get connected to markets as resource distributors, but still they have found ways to be highly self sufficient. In contrast to EMF's, SDF's seem to have more difficulties to be self sufficient and less difficulties to connect themselves to the markets. Since SDF's want to increase their dairy production, they try to improve both the quality and quantity of the provided input. With respect to quantity, regular production of milk requires more input than SDF's are able to generate at their farms. Feed produced at the farms also lacks adequate quality to obtain high dairy productivity. Due to both reasons, SDF's increasingly tend to buy improved feed and other inputs that increase the cow's production at the market. This decreasing autonomy and increasing dependency to the markets mark the voluntary base of the SDF's own choice to easily connect themselves to the markets, in contrast to EMF's who often only attend markets to mobilize resources when they do not have another choice.

"The problem that Ethiopian dairy farmers are facing is both quantitative and qualitative. First, they are often not able to produce enough crops to feed their cattle. Second, the quality of their feed is often inadequate. They are not able to be autarkic, but they are also often not able to buy additional feed. Increasing general productivity and an improved dairy market could be turning points." – Gadisa, large dairy farmer in Ambo

This dependency to markets has some problematic implications for the SDF's ability to access and control their resources. When farmers get further involved in a process of commoditization, they might get stuck to the whimsicality of the markets. Since more farmers start to use technologically improved resources, the availability of and access to e.g. fertilizer becomes more uncertain. Those farmers also get dependent to market prices, which are often unpredictable unstable and increasing. One important cultural implication is to be mentioned. Since farmers are culturally expected to be self sufficient by other locals, it is a shame for them to buy large amounts of feed at the markets. Those examples of difficulties inherent to an increasing dependency to the markets underline agroecologists arguments that markets are not the ideal institutions to distribute resources. Although the productivity at the farm level might rise due to the improved resources derived from the markets, it should be more ecological and economical sustainable to maintain the farmer's high level of autonomy and their close relation to the nature. The problem is not dairy production itself, but the challenge is to develop dairy production into sustainable business and integrate it in multifunctional farming while respecting and sustaining local practices and knowledge.

There appears to be a positive relation between the farming style and the influence of the government at the farm level. Larger dairy farmers receive more support than small SDF's and EMF's since the Ethiopian government expects large scale dairy farming to be the future farming style. This support exists of the supply of modern resources like insemination and vaccinations, provision of trainings and the supply of capital through bank credits to enable needed investments.

# **Construction of knowledge**

In this report, knowledge is considered as an important resource that determines farming structures. Farmers who intend to focus on dairy farming are often faced with a lack of appropriate knowledge on how to crossbreed, how to feed the cattle suitable and how to milk their cows efficiently. There is also a lack of clarity on how to implement and use new resources and modern tools most efficiently at the farm's level. Both external experts and local farmers argue that they "must attend trainings and classes to obtain new information and knowledge instead of local self constructed knowledge" (Alemnu, specializing dairy farmer in Garera).

Where EMF's mainly construct and share knowledge by trial and error and copying each other successful strategies, SDF's receive specific knowledge concerning dairy production from experts who aim to establish and develop dairy production by the small Ethiopian farmers. Those experts can be involved in FTC's grounded in the governmental policy to 'change traditional farming into modern farming'. Also foreign institutions contribute to the construction of knowledge on dairy farming. Both EMF's and SDF's want evidence before they change habits since they often don't consider new pathways and theories to be more profitable. Only after they recognize and experience that dairy farming indeed increases revenues, they intend to use dairy ideas at their own farms. This implies that traditional ways of knowledge construction are still prevalent amongst SDF's.

What strikes is that larger SDF's are often supported to act as pilot farms by external experts to share dairy knowledge with smaller SDF's or EMF's. A dairy farmer in the Sendaba Valley told me that the government offered him to follow an agricultural study. After having finished this study, he decided to focus on dairy production. The Ethiopian government encourages him to share his modern knowledge in a traditional way with other farmers around him. Currently, several farmers from the local community take advantage of his knowledge to get advices. In exchange for his efforts for the local community, the government accumulates the support. This way of sharing knowledge increasingly occurs amongst SDF's, also without the interference of the government. The farmers involved in the cooperative also apply this way of knowledge construction in an attempt to teach how to use concentrates and how to feed appropriately.

Governmental attempts to increase modern knowledge on dairy farming are also criticized by the local farmers. As Alex argued, "governmental institutes are often very bureaucratic and corrupt. The governmental worker in Warka Kore also doesn't like to work hard. During the most important time of the year, the rain season, he is not willing to come to the farms because of the mud" (Alex, specializing dairy farmer in Warka Kore). I experienced the weakness of the governmental share of knowledge when visiting the agricultural research centre in Ginchi. Five Frysian Holstein cows are present at this centre, which is established by the Ethiopian government to develop modern resources. The cows were imported from the Netherlands three years ago. The governmental researchers were amazed that the cows only gave around 5 litres milk each day, although they were promised to give around 30 litres each day. When I asked the researchers how they feed the cows, they told me that they are fed by only grazing around at the compound of the centre. Not any quality feed (either natural or artificial) is provided. They were surprised when I told them that the input (feed) of the cows is having large impacts on the output (milk) of the cows, because they didn't know about the significant relation between those two. It clearly showed that knowledge on dairy production, even amongst governmental agricultural 'experts', is still inadequately small.

# **Conversion and enrichment of resources**

Not only the process of resource mobilization of SDF differs compared to EMF, but also the way those two types of farmers convert and enrich their resources into end products. The following description concerning the objects of labour, tools or instruments and the labour force shows the

different enriching practices. This paragraph narrates the story of how SDF's convert their inputs into dairy products. Also the way SDF's try to increase the efficiency-maximizing relation between input and output, the I/O relation, is explored. Where EMF's mainly focus on different activities like livestock breeding, crop production and eucalypt production, revenues of SDF's are most importantly generated by dairy production. This does not mean that SDF's do not produce crops or breed livestock, but these activities often serve to realize dairy production. For a more detailed explanation on the meaning of objects of labour, tools or instruments and the labour process, please see the description on the second paragraph of the previous chapter.

# **Dairy production**

Only a few farmers I met around the Sendaba Valley focus at specializing on dairy production. Those farmers often have larger farms compared to other farmers and seem to be richer. They mentioned that dairy farming has pulled their farms from a deadlocked situation into new opportunities. Those farmers particularly have cows rather than sheep or other types of cattle. They often have more cows than EMF's and the cows are more regular (partly) crossbred with external races like Jersey's and Frysian Holstein's. Where the livestock of EMF's is most importantly fed by grazing around, the livestock of SDF's often stays at the compounds by day where they are fed with more quality feed. Revenues of SDF's seem to be higher than EMF's, but it also appeared that their revenues are more unstable. The most important differences are their opportunity to crossbreed the local cows with external races like the Frysian Holstein race and the Jersey race, their knowledge on how to increase milk production and the increased accessibility to milk markets. Although the production of dairy products could potentially be a large source of income, it still is not conducted at large scale due to little knowledge on dairy farming and inappropriate facilities to produce milk as a commodity.

# **Objects of labour**

Examples of objects of labour with regard to dairy production are the livestock, feed and water.

### Livestock

The local cows are mainly not suitable to produce a lot of milk. Those cows produce on average around two, or under good circumstances three litres of milk. Although this might be increased by improving knowledge on feeding and milking practices, it can be argued that farmers around the Sendaba Valley need to crossbreed their local races with more dairy productive ones e.g. the Frysian Holstein race and the Jersey race to realize higher milk production. All the SDF's I spoke with indicated that they are transforming their livestock from local races to the Frysian Holstein race because of their higher dairy productivity.

"I decided to change my cattle for the Frysian Holstein race around 20 years ago. They have a good name with regard to milk production. My cows give around 12-16 litre each day." – Gadisa, large dairy farmer in Ambo

The process of crossbreeding local cows with the Frysian Holstein race is part of the governmental 'modern farming' policy and is applied by almost all veterinarians. However, not all SDF's make use of veterinarians to crossbreed their cows. Gadisa argued that he never makes use of artificial insemination because he doesn't believe the semen is of good quality and without diseases. He merely uses his own bull to crossbreed. One example from another large city Debre Zeit showed the weakness of the artificial insemination system in Ethiopia. Urban dairy farmers in this city (which are further analyzed in the end of this chapter) make a lot use of artificial insemination applied by veterinarians. During my visit to Debre Zeit, it appeared that at a lot of urban dairy farms young calves were infected by the Bovine Virus Diarrhoea disease due to infected semen used within the artificial insemination. This shows the disadvantage of using external techniques at the farm's level.

# Feed and water

As indicated before, SDF's have difficulties to be self sufficient since dairy production needs more feed than they are able to produce by themselves. The farmers also lack quality feed which is needed to meet the ration requirements of the cows in order to increase the productivity of the cows. The result is that they have to attend markets more than EMF's to buy additional cereals, concentrates and selected seeds. SDF's are quite dependent to the markets and governmental institutions with regard to their inputs. Their production is particularly used as input at their farms, with the result that they do not earn a lot of money with the sale of crops at the markets.

The most important type of feed bought at the market is concentrates. Concentrates are quite expensive and mainly only richer farmers can afford to buy them. Compared to EMF's, SDF's buy a lot concentrates because they know by proof and experience that this increases their dairy productivity. The cooperative is the most important place to buy concentrates. The farmers involved in the cooperative collectively buy concentrates from a Dutch factory in Debre Zeit to lower the price. A large extent of the concentrates is sold to farmers who are not member of the cooperative. The price of one quintal concentrates is around 375 Birr, depending to the type and the quality. The use of concentrates shows the farmer's attitude to increase productivity of either dairy production or meat production. It is an example of the farmer's creativity and self-resolving power.

- 1. *Concentrates to stimulate milk production*. This type of concentrates increases the quality and the quantity of the milk production. They are mainly only bought by SDF's since EMF's often do not know or trust its added value regarding the production of milk. SDF's who use this type of concentrates indicate that they recognize higher dairy productivity due to the provision of these concentrates.
- **2.** Concentrates to stimulate fattening. Contrary to the first type of concentrates, those concentrates are much bought by both EMS's and SDF's. Farmers experienced that this investment in the relatively expensive concentrates increases revenues due to improved growth and fattening of the cattle.

The production of milk not only requires feed of enough quality and quantity, but also a large amount of water. Since SDF's mainly have more financial means available than EMF's, they seem to be more able to construct systems that derive water from natural resources.

### **Tools or instruments**

Examples of tools or instruments with regard to livestock breeding are both modern and traditional hand tools, electricity and veterinarian services.

# Traditional and modern hand tools

It appeared that SDF's use more advanced tools than EMF's since their need for those tools and their ability to buy them are higher. Their dependency to markets clearly not only relates to the buy-in of additional feed. With regard to the production of crops, SDF's make more use of selected seeds and fertilizer in an attempt to be more self-sufficient by increasing the quality and the quantity of their crop production. They also show a larger use of chemicals like herbicides, pesticides and insecticides. In addition, SDF's more regular have motorized tools e.g. water pumps for irrigation, sewing machines or tractors. At the farm of Gadisa, a large dairy farmer in Ambo, I explored that the labour process is enlightened to a large extent due to the use of motorized tools. In some case SDF's have own motorized transportation opportunities to easily transport their dairy products on daily basis.

# Electricity

Two main reasons lay behind the larger use of advanced tools by SDF's. First, they have more financial means available to buy the more expensive tools. Secondly, they have more regular access to electricity which enables them to use electric tools. Due to a higher access to electricity it is not

only easier for them to produce dairy products, but also to store them for a longer time. At the same time, most SDF's mentioned that they don't want to be too dependent to the use of electricity since its provision often falters.

Access to electricity is provided by the local government. Since the government has approved the policy to 'change traditional farming into modern farming', specializing dairy farmers are encouraged to improve milk production by an increased access to electricity. In the case of EMF, the community collectively has to apply for regular provision of electricity, which is often not awarded. Also in the case of SDF, governmental support for the farmers is not always a matter of course.

"I am not always supported by the government. They are often very corrupt and always ask bribes for services. I have built my own water pump and electricity system, but the government doesn't give the needed final permission to get connected to the public system. The larger your farm is, the more you are influenced by the government, both in restrictive and supportive sense." – Gadisa, large dairy farmer in Ambo

# Veterinarian services

Veterinarians are general counsellors at the farms. It seems that they act as governmental pilots to encourage modern farming. As indicated, an important service delivered by the veterinarians is their ability of artificial insemination. This makes it easier to crossbreed local races with external races of higher productivity. Especially the Frysian Holstein race is having a high demand the last few years. Inseminating Frysian Holstein semen is particularly done by SDF's rather than EMF's. Veterinarians also play a large role in the provision of modern medicines. The increasing use of medicines might have problematic complications. One dairy farmer mentioned that 18 of his Frysian Holstein cows have died due to inappropriate administration of medication.

### Labour process

The required labour to produce, store and transport dairy products is quite intensive at most farms. The cattle need to be fed and milked accurately. The milk needs to be transported daily or transformed into other end products like cheese and butter. Five main labour processes are important: herding, feeding, milking, processing milk and transporting dairy products. The increased use of resources bought at the market requires more time of the SDF's to attend markets.

### Herding

The practice of herding is mainly done by the children of the farmers and is the same for both EMF's and SDF's. The only difference is that SDF's more often keep their cattle at their compounds meaning that there is less need for herding. The SDF's keep their cattle at the compounds since they need to milk them at least twice a day, since their Frysian Holstein cattle is more valuable and since they need to be additionally fed with quality feed.

### Feeding

In contrast to EMF's, feeding is a more important activity of the SDF's. SDF's need to provide more additional (quality) feed which requires more of their time. SDF's are also busier with buying feed at the market. Feeding practices are mainly conducted by men.

### Milking and processing milk

Culturally determined, the milking process is most often done by women. They milk the cows around two or three times a day, in most cases by hand. The milk is stored and daily transported to the collection point in Ginchi. Most SDF's process raw milk in butter, cheese and yoghurt. Part of this production is internally used as food at the farms; the other part is sold at the markets. In contrast to raw milk, the processed products are more regularly bought by private customers at the markets.

### Transporting dairy products

It is important to keep dairy products fresh. The need to regularly transport them to places where the products are sold is a threshold for dairy producers to change to dairy farming because of their difficult transportation opportunities. The farmers connected to the cooperative bring their milk to the common milk collection point in Ginchi where the milk is sold to especially public customers like bars and hotels. Transportation is mainly traditionally done with the help of donkeys and horses.

### The heritage of multifunctional farming

Specializing dairy farmers could in some sense also been seen as multifunctional farmers since they also partly breed livestock for fattening and also produce different crops as well as eucalypt wood. Yet, a lot of characteristics of EMF are found in SDF. SDF's increasingly engage in a specializing process, but at the same time they keep on conducting multifunctional farming. The difference though is that these activities are additional and serving the purpose of producing dairy products. SDF's also make more regular use of modern inputs like chemicals, fertilizer, selected seeds and motorized or electric tools to increase productivity and they easier attend markets for inputs.

There are no significant differences between SDF's and EMF's with respect to the households and the construction of labour through family farming which shows that also SDF's still have features of a long history of multifunctional farming. At both types of farms all the family members are having their role within the farm activities and both types of farmers use livestock power for heavy work. Differences are that SDF's conduct other practices at their farms, that they more regular make us of paid external labourers and that their children are more likely to attend education.

# **Commercialization of end products**

Where the previous two paragraphs concerned the mobilization of resources and the way those resources are being converted and enriched into dairy output, this paragraph describes dynamics of the commercialization and marketing of dairy products around the Sendaba Valley. Respectively, notions on the sale of dairy products, the functioning of the dairy market, processes of non-commoditization and dynamics of saving and investment strategies of SDF's are described.

### **Commoditizing dairy products**

### Introduction

The most important place for dairy farmers to sell their milk is the cooperative in Ginchi where milk of several SDF's from the Sendaba area is collected and collectively sold to particularly public customers. The milk is collected daily and stored cold. Dairy products which are processed at the farms are easier sold to private customers at the local markets.

### Faltering dairy markets

Different stakeholders argued that a weak and unstable dairy market is the largest threshold for multifunctional farmers to specialize to dairy farming. Although Ethiopia has a lot potential dairy consumers because of its 90 million inhabitants, there actually is not a large market for regularly producing and trading milk as a marketable product. The development of the dairy markets remarkably unfolds faster in urban areas than in rural areas. Several reasons at both supply side and demand side lay behind the faltering development of dairy farming.

### Supply sided obstacles

Farmers often lack adequate knowledge and facilities to produce milk at large scale and generate a profitable business out of dairy production. Their local cows have a low productivity, they are increasingly dependent to markets to obtain quality feed, they do not know how to appropriately feed their cows and effective milking practices are unknown. Practically they face problems to store

and daily transport the milk to the cooperative in Ginchi or other places where milk is traded. Regardless constraints to produce milk at the farm level, demand sided barriers are more important to explain why most farmers do not focus on dairy farming.

"I do not produce milk because my cows do not give a lot of milk, but most importantly because there is no opportunity to store or to sell it at the market." – Alemnu, dairy farmer in Garera

# Demand sided obstacles

Ethiopians are not used to milk as a consumable product. For this reason, most of the SDF's partly process their milk into other dairy products like cheese, butter and yoghurt which are easier sold at the markets. A lot of consumers are afraid that the taste and the quality of the milk produced by Frysian Holstein cows are lower than the milk from their own local races. They argue that the percentage water in milk from Frysian Holstein cows is larger, which means a decrease of fat content and a loss of taste. Since there is only small demand for milk from the private sector because of its relatively high price, the sale of milk is dependent to the demand from the public sector, which concerns a much smaller market. Beside this, there is a lack of companies or institutions that buy and process milk at a large scale. In contrast to EMF's, SDF's face significant more competition from foreign investors. One dairy farmer mentioned that foreign investors and he both try to introduce improved cattle races, they both aim at dairy production, they both share modern knowledge and they both introduce modern technologies.

# Cultural constraints

"It feels very weird for us to sell milk. People will laugh at me when I try to. To develop dairy production, it is inevitable to first change the cultural mindset" – Tesfaye, dairy farmer in Ginchi

There are some cultural constraints at both supply and demand side why the production of milk is faltering. The most important constraint is that it is culturally unaccepted to sell milk as a *marketable* product. Milk is traditionally seen as a product that should be used internally at the farm. Sometimes it might be shared with family or neighbours, but it is unaccepted to ask money for it. Furthermore, due to both Christian and Islamic religion, almost all Ethiopians fast around two months per year. During this fasting period they are not allowed to consume any dairy product, which brings farmers who are highly dependent to the sale of milk into trouble during the fasting periods.

"During fasting times, I process my milk into butter and cheese which are longer preservable. There is no opportunity to sell milk during fasting times." – Gadisa, dairy farmer in Ginchi

The SDF's argue that the tough establishment of the dairy market is preventing them from a faster and steady development. A healthier milk market, as they mentioned, would increase their opportunities to enlarge revenues due the sale of dairy products. The role of the cooperative is considered by them as positive and supportive since the government lacks supporting the dairy development of small farmers. Only the last few months the government enabled smaller dairy farmers to get connected to regional milk collection points when certain qualitative and quantitative standards are met. However, this marketing is often unstable and hard to access. Most farmers do not produce enough milk to qualify for this service.

# Flows of non-commoditization

In the previous paragraph I already argued why and how dairy farmers still have characteristics of multifunctional farmers. Specializing dairy farmers still produce several different end products like

vegetables and eucalypt wood which are sold at the markets alongside the sale of dairy products. However, most of their production is aimed to efficiently serve as new inputs at the farms in an attempt to increase their autonomy since they face more difficulties to be self sufficient than EMF's. Therefore most of the crops produced at the farms are non-commoditized. Dairy farmers mainly produce more effectively due to the use of modern tools, selected seeds and fertilizer.

# Saving and investment strategies

"The reason why I have a larger farm compared to other farmers is that I have clear ideas about what I do with my revenues and that I indeed re-invest earned revenues. The difference is most visible in the investments since I have enough capital available to invest on large scale. A large part of my revenues are reinvested in new technologies that help increase production. By doing this, I am different from other farmers who often don't have concrete ideas or visions on how to invest their revenues most appropriately." – Alemnu, dairy farmer in Garera

This different way of using and investing revenues from dairy farming criticizes saving strategies of other small farmers around the Sendaba Valley. It is clear that the way farmers deal with their revenues and the way they construct expenditure patterns both depends to and determines their farming style. Dairy farmers seem to more sustainably deal with their revenues and are more likely to invest in modern resources. On the one hand this might increase their productivity; on the other hand this increasingly makes them dependent to the whimsicality of the markets. SDF's appear to deal more consciously with their money and to plan investments more accurately than EMF's.

# The way forward

Only few farmers I met around the Sendaba Valley focus on dairy production. Those farmers had larger farms compared to other farmers and seemed to be quite rich. They mentioned that dairy farming has offered them new developmental opportunities to pull themselves out of a deadlocked situation. Although dairy farming has been faltered developing, successful examples are already present. To develop dairy farming, the following actions must be performed. Quoting the leader of the cooperation, 'once there is a healthy milk market, the dairy industry will develop itself since farmers will recognize its profitable opportunities', we must acknowledge that establishing a stable dairy market is most important. The local cows should be crossbred with more productive milking cows. The availability of quality feed and concentrates should be provided while at the same time attempting to sustain the highest possible level of autonomy of the SDF's. Farmers should receive trainings on dairy farming giving them information on how to feed and milk their cows properly. Furthermore, the farmers must get connected to milk collection points and to their customers: the private customers, the public customers and the milk processing companies.

"For future, we as farmers must attend trainings and classes to get new information and knowledge instead of local self constructed knowledge. New and innovative knowledge concerning milk production, feeding and crossbreeding is needed to increase production." – Tesfaye, dairy farmer in Garera

# **Urban Specializing Dairy Farming**

While visiting Debre Zeit, I recognized a third type of farmers, the urban specializing dairy farmers. This farming style is partly a result of the interference of foreign investments and partly a result of the local farmer's own creativity and adaptability. It anyhow demonstrated how further development

of the milk market could affect traditional and local farming practices in both positive and problematic sense and it shows how the process of de-autonomizing might lead to full dependency to the markets with respect to the mobilization of resources. Where the dairy farmers around the Sendaba Valley can be mentioned as *specializing*, they can be mentioned as *specialized* in Debre Zeit. The example of Urban Dairy Farmers gives insight in how farming practices and structures change when farmers start to specialize on dairy farmers, which is relevant in this research to develop appropriate ways of encouraging dairy production while avoiding certain pitfalls.

Debre Zeit is a larger city in the south of Addis Abeba and has around 120.000 inhabitants. The last few years, several foreign investors focussing on dairy farming established farms around Debre Zeit. Together with the establishment of those farms, a Dutch investor established a milk processing company, called Holland Dairy, to process the milk produced by both foreign and Ethiopian farms. In Debre Zeit, due to the establishment of a stable milking sector and milk market, local farming has changed a lot. Urban dairy farming took-off ever since and increased significantly. Those urban farms have a few cows of mainly the Frysian Holstein race to produce milk. Each cow gives around 15 litres a day. Those cows always stay in the barn and are merely fed with quality feed like straw and concentrates instead of by grazing around in the field. Since these urban farmers do not have the opportunity to cultivate land, they have to buy all the needed feed at the market.

The inflow of foreign dairy farms in Debre Zeit has not only changed the structure of the local markets to a large extent, but also the identity of the farmers and their practices. The following table shows the differences and similarities between urban dairy farming in Debre Zeit and dairy farming around the Sendaba Valley. The term 'farmers' refers to 'SDF's' in the right hand column.

| Main focus of the farms   | Only dairy production.   | Specializing on dairy production,<br>but still with a multifunctional<br>character.  |
|---------------------------|--|--|
| Milk production           | Cows are milked more times a day and give around 15 litres of milk. Milk is the only end product of the farms. | Cows are milked only once a day<br>and they give around 5 litres of<br>milk. Milk is not the only end<br>product of the farms. |
| Milk market               | Almost all produced milk is sold<br>at the market. There is a stable<br>milk market in Debre Zeit.             | SDF's have difficulties to<br>transport and trade their milk.<br>There is no stable milk market in<br>the Sendaba area.        |
| Race of the cattle        | Farmers have merely cows of external races.  | The type of cattle is changing to more productive ones.  |
| Breeding programs         | Most of the cows are<br>inseminated by Holstein semen.   | Cows are mainly made in foal by using own bulls.   |
| Grazing                   | Cows stay in the urban farm due to a lack of grazing lands.  | Cows stay at the farm by night;<br>by day they are grazing around.   |
| Provision of feed         | Cows only get feed bought at<br>the market. Examples are straw,<br>teff, maize, wheat and<br>concentrates.     | SDF's try to feed their cows with<br>own produced feed, but they<br>increasingly attend markets to<br>buy additional feed.     |
| Provision of concentrates | Most of the cows receive concentrates, except bulls and oxen.  | Mainly only bulls and oxen receive concentrates.   |

# Dairy farms in Debre Zeit SDF's in the Sendaba Valley

| Availability of land    | Farmers do not have any land.  | The government provides land personally to produce crops and for grazing around.   |
|-------------------------|--|--|
| Diversity of the cattle | Farmers mainly only have some<br>Holstein cows and one or two<br>oxen and bulls.   | SDF's have a diverse livestock:<br>cows, oxen, bulls, sheep, goats,<br>chickens, donkeys and horses.   |
| Access to markets       | Farmers in Debre Zeit are well connected to (dairy) markets.   | Dairy markets are difficult to access for the SDF's.   |
| Foreign investments     | In Debre Zeit a lot of large<br>foreign farms are established<br>the last few years. Those farms<br>play a role in the establishment<br>of a stable milk market and<br>provision of trainings, improved<br>feed and tools. | In the Sendaba Valley there are<br>some large foreign investors,<br>although they mainly don't<br>produce for local markets. They<br>most importantly offer demand<br>for employment, technologies<br>and products.                    |
| Risk of diseases        | There are several examples of<br>semen of low quality that<br>infected young calves at<br>different farms. Diseases<br>disperse rapidly in the city.   | In the Sendaba Valley SDF's are<br>less connected to each other,<br>resulting in lower risks of<br>diseases.   |
| Labour process          | Farmers don't have intensive<br>labour processes to produce<br>milk. The only work to be done<br>is buying feed, feeding the cows,<br>milking the cows and selling the<br>milk. All the work is done by<br>family members. | The labour process of the SDF's<br>is more intensive than in Debre<br>Zeit. Labour is needed to look<br>after the cattle, to produce<br>crops and to milk the cows.<br>There are less technologies to<br>enlighten the labour process. |
| Inputs and outputs      | All inputs are bought at the market. Most of outputs are sold at the market; only a small part is produced for own use.  | An increasing share of input is<br>bought at the market, but still<br>the SDF's have a high degree of<br>autonomy. Most of the output is<br>sold at the market.  |

# **Concluding remarks on SDF**

# Common characteristics of SDF

Only a small part of the farmers around the Sendaba Valley focuses on dairy production. Those farmers are inspired by agro-industrialist thoughts to specialize on dairy farming. Although they are specializing, still several features of the heritage of a long history of multifunctional farming are prevalent. SDF's are most importantly characterized by firstly their attitude to easily connect themselves to markets with respect to the mobilization of resources and secondly their disassociation from aiming at several activities towards specializing on dairy farming. Conducting several activities serves to realize dairy production rather than to spread risks. SDF's are less able to be self sufficient since dairy production requires inputs of more quality and quantity than multifunctional farming. In an attempt to reach the highest level of autonomy possible, SDF's increasingly release their close relation with the nature and attend markets to buy additional feed and concentrates and modern tools like artificial insemination, fertilizer, chemicals and selected seeds that increase the productivity. The largest part of the SDF's output concerns dairy products rather than crops and livestock. The markets they produce for also differ in a sense that they often produce for regional markets and that their customers are public rather than private. Like EMF's,

they have large households and the labour process is often organized through family farming in which all the members have their own tasks. SDF's make more use of paid labourers than EMF's. SDF's often obtain knowledge by external experts, but mutually knowledge is often shared in a traditional way. With regard to investment strategies and saving behaviour, SDF's have often more financial means available to invest, they easier spend their money in investments and they deal more consciously with their money than EMF's. Lastly, SDF's are compared to EMF's highly influenced by external actors like the government and foreign investors since they are the target group of their agro-industrialist incentives to modernize Ethiopian farming and aim at dairy farming. The cooperative supports dairy farmers on own local initiative. Both facilities and knowledge to produce and sell milk are provided, while this also increasingly binds farmers to markets and the cooperative.

# Heterogeneity and similarities within SDF

Heterogeneity is more prevalent amongst EMF's than amongst SDF's. This might be explained with the relatively new and modern character of dairy farming as agro-industrialist businesses. Farmers who tend to dairy farming consult the same sources of knowledge, technologies and input and they mainly follow the same strategies. However, amongst these new practices, a large variety is found with regard to e.g. the amount of land available, the use of modern technologies, the used race of cattle, access to water and access to markets, which influences the productivity of dairy products at the farm level. SDF's show to a large extent the same strategies and practices, but the extent to which they (are able) conduct them differs. The higher productivity and availability of land is, the more they are able to be self sufficient and the less they need to attend markets. A significant difference amongst the SDF's is the extent to which they are influenced by external actors, particularly the government. The larger the farm is, the more it is supported and used as a pilot farm to help supporting smaller SDF's.

# Weaknesses of SDF

Several problems are embedded within the development of dairy production. First of all, due to the need of modern resources and the SDF's inability to be fully self sufficient, farmers get increasingly dependent to the whimsicality of markets. This has problematic implications with respect to unstable and high prices, uncertain availability of needed resources, low access of markets and the amount of money that needs to be spent additionally. Dairy farmers lack adequate knowledge on how to increase dairy production and how to use modern resources appropriately which requires new ways of knowledge construction. They do not only lack facilities to milk, store, and transport and process milk into end products, but dairy farmers also face a weak and unstable milk market. One of the most important reasons for the faltering milk market is the cultural mindset since trading milk as a marketable product is often unaccepted. Lastly, due to religious prescriptions, a large amount of the Ethiopian populations is not allowed to consume dairy products during a two month fasting period.

# Concluding

To conclude, SDF's are in a transitional process of *specializing*, rather than being *specialized*. Their practices are still influenced by the heritage of multifunctional farming. The challenge is to develop dairy production into sustainable business and integrate it in multifunctional farming while respecting and sustaining local practices and knowledge. The milk market should be improved and cultural constraints should be overcome. Facilities and knowledge on dairy production and modern tools need to be improved. Due to the creativity and adaptability of the Ethiopian farmers, they will fill the gap of dairy production when certain preconditions are created. At the same time, farmers should be encouraged to be as self sufficient as possible and they should be encouraged to integrate dairy production within their already existing multifunctional farming structure.

# **Chapter 6 – Discussion and conclusions**

#### Main research question

The main question of this research, which is formulated as "What farming strategies characterize smallholder farming in the Sendaba Valley, Ethiopia?" has gradually been answered through the different chapters. Where the previous chapters served to sketch an image of the farmer's strategies and styles around the Sendaba Valley, this chapter elaborates on their strengths and weaknesses and its implications for further development. Short summaries including the most prevalent conclusions are given on the farming styles together with an elaboration on how those results refer to the different concepts from the conceptual design and the notions of van der Ploeg. Furthermore, the quality of both the methods and the results is discussed, as well as the researcher's own experiences.

#### Goal of the research

The goal of this research has been to describe the strength of peasant farming to counter mainstream thoughts on the Ethiopian farmers to be traditional and inadequate to reach high productivity. Developmental organizations often try to influence agricultural development in Africa through a pathway of modernization that is not based on local structures. Modernization itself is not problematic; rather the way it has been given shape is criticized since it often implies that new ideas, technologies, practices and resources distributed at markets should be injected in the farms. Local farmers are often mentioned to lack knowledge and initiative and unable to modernize. However, the results of this research showed that the farmers around the Sendaba Valley in a lot of cases make clear economical decisions and have a lot of knowledge on agricultural practises. They appear to be creative and adaptable and to have forward incentives. These conclusions show that agricultural development around the Sendaba Valley not only *must* be done from the inside rather than from the outside, but that it also *can* be done taking into account the potential of the farmers. The goal is not to indicate how this should be realized, although some recommendations are included.

### Back to underlying theories

Van der Ploeg argues that a self constructed image of a virtual farmer often has been starting point in agricultural policy-making. As he argues, we should move beyond this image and identify the real farmer because of the risk to mismatch the actual needs and strengths of the existing system when the local structures and context are ignored. In this section I briefly refer to the theory elaborated in the conceptual design before drawing draw a sketch of the real farmers around the Sendaba Valley.

This research criticizes current mainstream thinking concerning the development of agriculture. Two paradigms dominate the discussion on the development of Ethiopian agriculture: the agro-industrial paradigm and the agro-ecological paradigm. Central in this discussion is how farmers organize the process of enrichment at their farms and what their future perspectives are. The agro-industrial paradigm implies that agricultural growth should be based on modernization and improved technological innovation, knowledge and efficient practices. The agro-ecological paradigm takes the smallholder farmers and their close relation with natural resources as starting point and prescribes alternative forms of agricultural growth which are sustainable in already existing farming structures.

### Agro-industrialization perspective

Actors who see agricultural development from an agro-industrialization point of view are the Ethiopian government and a large part of the scientific writers, NGO's and foreign investors. They take a mainstream thinking of development as a linear pathway through an increase of new external knowledge and resources distributed at the markets for granted. Summarizing, agro-industrialists try to cognitively modernize farmers through scale enlargement, intensification, mechanization, industrialization, technological innovation, standardization and specialization. They have a neo-liberal view on markets as ideal resource distributors, having implications for the farmer's autonomy.

Agro-industrialist policies are often organized based on a virtual image of farmers 'as we think they are'. Those actors attempt to change traditional farming into modern farming. The idea that something 'traditional' needs to be changed in something 'modern', is a result of normative linear thinking without taking local knowledge and contexts into account. The agro-industrial paradigm takes for granted that, although clear empirics that support the agro-industrial thoughts are lacking, modernization and mechanization are the most important determinants of agricultural development. The difficulty with the agro-industrial paradigm is that it does not provide sustainable ways of mobilizing resources. Most of the ideas are directly derived from first world settings and the implementation of the agro-industrial paradigm is often done from the outside while neglecting indigenous strengths and needs; from 'experts' who take for granted that modernization in all situations will be the way forward. They neglect that modernization means a clash of different perspectives. To overcome the indisputability of the agro-industrial perspective and mainstream axioms, there is a need for opposite empirics that show the farmer's potential.

# Agro-ecological perspective

The agro-ecological perspective emerged in an attempt to show inaccuracies of agro-industrialist mainstream thinking. Van der Ploeg argues that the constantly ongoing industrialization and the ordering of world markets are important reasons for the current agricultural crisis. Scale enlargement became an intrinsic need since farmers became dependent to industrial and financial capital. This constituted a 'race to the bottom', with the result that farmers started to follow the logic of the market and increasingly lost their autonomy and close relation with the nature. Agro-ecology goes beyond a one-dimensional view of agro-ecosystems by emphasizing its social and natural embeddedness. In contrast to the agro-industrial view, it takes the natural agro-ecosystems as starting point of sustainable development. Agro-ecology describes potential of small scale farmers who have low productivity, who are resource-poor and who do not have available new technologies. It approaches multiple land use strategies, traditional resource management techniques, local cropping system design and management, uses of local resources for pest control and conservation of local varieties. The agro-ecological perspective recognizes the need to improve agricultural production. The starting point however is not modernization but rather the local natural and social context. As a summary, agro-ecologists call for re-peasantization by introducing opposite empirics that show smallholder farmer's potential, creativity and adaptability. They encourage maintenance of the farmer's close relation to natural resources since a high level of self sufficiency is sustainable.

### **Different farming styles**

Two main farming styles appeared to be prevalent in the Sendaba Valley. The first style is economical multifunctional farming and this is the most common one. EMF is conducted since centuries and tends to peasantry with its multifunctional character, a high degree of self sufficiency and a close relation with the nature. The second style is specializing dairy farming, which is a rising phenomenon the last years. Those farmers seem to modernize, specialize and bind themselves easily to markets.

# Economical Multifunctional Farming

The most important characteristics of EMF's are that they are multifunctional farmers who make economic decisions to spread risks and that they are able to be self sufficient to a high extent. They have a close relation with the nature rather than with markets with respect to the mobilization of resources, although their dependency to the markets seems to increase the last few years. The labour process is constructed by family farming by contribution of all family members. EMF's have a lot of knowledge about their practices and this knowledge is traditionally divided by sharing and copying. They show creativity and adaptability. Their tools are often traditional and homemade, although there is an increasing use of chemicals, concentrates, fertilizer and selected seeds. The largest part of the EMF's production is non-commoditized as new input for the farms. EMF's are, in contrast to SDF's, not much influenced by external actors like the government and foreign investors.

There is a lot of heterogeneity amongst EMF's. This heterogeneity shows both creativity and adaptability and encourages diversification, coproduction and growth. The most important difference is the degree of self sufficiency. EMF's increasingly rely on markets to mobilize resources. There are differences in the use of modern resources like fertilizer, selected seeds, concentrates, chemicals and advanced tools result in different levels of productivity *and* different degrees of autonomy. EMF's also have different investment and saving strategies and different attitudes towards receiving new external information. The one farmer is more open-minded towards adapting new information, practices and strategies than the other. There is a generational gap between followers and leaders of development and change. EMF's who have a lot of water available and EMF's who have more land available to cultivate receive significantly more revenues than others.

Economical multifunctional farmers appeared to be able to perpetuate their farms rather than to develop themselves to higher levels of farming. They lack knowledge, financial means and ideas to reach higher productivity. They face difficulties to make dairy production a profitable business. They lack financial means to buy advanced tools and they lack knowledge on how to use them appropriately. Because of their close relation and dependency to the nature, they are more vulnerable to income shocks and harvest failures and less vulnerable for the whimsicality of markets.

# Specializing Dairy Farming

Influenced by agro-industrialist thoughts, only few farmers around the Sendaba Valley specialize on dairy production. Although they are specializing, still a heritage of a long history of multifunctional farming is prevalent. SDF's are less able to be self sufficient than EMF's since dairy production requires inputs of more quality and quantity. SDF's increasingly release their close relation with the nature and attend markets to buy additional feed and concentrates and modern tools. SDF's produce for regional markets and their customers are public rather than private. Like EMF's, their labour process is organized through family farming, but they more regularly have paid labourers. SDF's often obtain knowledge by external experts, but mutually knowledge is shared in a traditional way. SDF's have more financial means available to invest, mainly resulting in higher production and less autonomy. Dairy farmers are more influenced by agro-industrialist actors like the government and foreign investors who try to modernize and develop dairy farming. There appeared to be local initiatives to support dairy farmers by providing facilities and knowledge.

SDF's show less heterogeneity than EMF's, which might be explained by its relatively new and modern character of agro-industrialist businesses. Dairy farmers show to a large extent the same strategies and practices, but the extent to which they (are able to) conduct them differs. A large variety is found with regard to e.g. the amount of land available, the use of modern technologies and the access to water which influences their productivity at the farm level. The higher productivity and availability of land is, the more they are able to be self sufficient. A significant difference amongst the SDF's is the extent to which they are influenced by external actors, particularly the government. The larger the farm is, the more it is supported and used as a pilot farm to help supporting smaller SDF's.

Several problems are embedded within the development of dairy production. First of all, due to the need of modern resources and the SDF's inability to be fully self sufficient, farmers get increasingly dependent to the whimsicality of markets. This has problematic complications with respect to unstable and high prices, uncertain availability of needed resources and low accessibility of markets. Dairy farmers lack adequate knowledge on how to increase dairy production and how to use modern resources appropriately and they lack facilities to milk, store, and transport and process milk into end products. Dairy farmers also face a weak and unstable milk market, since e.g. trading milk as a marketable product is culturally unaccepted. Due to religious fasting periods, dairy producers face difficulties when a lot of Ethiopians are not allowed to consume dairy products.

### Analysis of the theoretical concepts and farming styles

The theoretical concepts of agro-ecology and agro-industrialization have shown parallels with the identified two farming styles Economic Multifunctional Farming and Specializing Dairy Farming. This section analyzes the theoretical concepts as embedded in the farming practices.

### EMF and agro-ecology

EMF clearly appeared to have similarities with characteristics of peasant farming described by agroecologists. They have proven their strength to be able to adequately make themselves a living. Their high degree of self sufficiency and their multifunctional practices are a key factor for their success. The way EMF's conversed resources is an efficiency maximizing I/O relation. Van der Ploeg argues that not technological innovation, but the labour process is the most crucial factor by which a frontier function, the most efficient I/O relation, could be reached. Appropriate farming then could be seen as optimizing the process of efficiency between the input and the output. The examples of the EMF's around the Sendaba Valley showed that EMF's obtain enrichment in an interaction between the social and the nature. In this interaction, efficiency and an increase of productivity is reached. Through the labour process organized at the EMF's, new production patterns based on endogenous knowledge and opportunities are created, which clearly led to heterogeneity amongst the farmers and variable I/O relations. The interaction between the mobilization and enrichment comprised a fluid variety due to different relations with resources, which is in line with agro-ecologist arguments. Diversification in the Sendaba Valley resulted in growth, competition, products of more quality and diversification at the market level.

EMF's showed sustainable ways of mobilizing resources which are prescribed by agro-ecologists. They have a close relation to the nature and reject markets as ideal distributors of resources. Their high degree of autonomy and low dependency to the markets determines their ability to perpetuate their farming practices. They don't have a one-dimensional view on agro-ecosystems, but they engage in a multifunctional relation with the nature. EMF's showed creativity and adaptability to organize their farming strategies based on endogenous knowledge and practices rather than on external influences. These features clearly show the agro-ecologist character of the EMF's.

### SDF and agro-industrialization

Not only parallels between EMF and agro-ecology are to be drawn, but also those between SDF and agro-industrialization. SDF's inability to be self sufficient and their increasing dependency to markets seem to be direct results from their changing strategies based on agro-industrialist thoughts. Specializing, which itself is an agro-industrialist concept, entails a need of modern resources, knowledge and practices. Since the SDF's are not able to obtain this at their own farms, they need to attend external sources to receive and develop their modernizing needs. This not only contains an increasing dependency to the whimsicality of markets, but also technological innovation and industrialization. SDF's release their close relation to the nature with regard to the mobilization of resources. Implementation of agro-industrialist thoughts clearly implies less sustainable ways of resource mobilization and enrichment. Specializing is a linear agro-industrialist pathway which discourages SDF's to conduct multifunctional farming strategies. External input of resources, knowledge and practices becomes more important at the SDF's than indigenous structures. These processes show how agro-ecological ways of organizing farming strategies decrease under influence of agro-industrialist points of view.

# Reflecting the used theoretical concepts

The theoretical concepts are clearly recognizable in the two farming styles and act as windows to partly understand and describe the reality of farming around the Sendaba Valley. The concepts provided guidance to analyze the identity of farming strategies and the way they are changing. However, the concepts need nuance since it is important to don't get too much caught in fixed theoretical models. The farming reality in the Sendaba Valley cannot be drawn point to point with

linear reference to the theoretical models since the reality is more complicated and is constructed through multiple determinants. Each farmer has his own specific story, context and backgrounds. It appears that the two styles not only co-exist, but they also mutually influence and determine each other. The same appears in between the two theoretical concepts of agro-ecology and agro-industry. The farmer's need for healthy markets, their inability to obtain important resources from own production and their unavoidable relation with markets show the demarcated and abstract character of the concepts' assumptions, which limits their potential to understand the reality.

#### Mutual influences between the two styles

It appeared that SDF's have similarities with EMF's, but they find themselves back in an ongoing process of searching and defining most profitable practices. SDF's are in a transitional process of *specializing*, rather than being *specialized*. Their practices are still influenced by the heritage of multifunctional farming. This shows that those two styles not only co-exist, but also mutually influence and determine each other's character. The foregoing analysis shows that the agro-ecological perspective rather than the agro-industrialist perspective provides theoretical and practical underpinning that might develop both the EMF's and SDF's most importantly with reference to the SDF's struggles to be self sufficient. The strengths of EMF, which show features that are described as sustainable by agro-ecologists, might provide solutions for the SDF's difficulties. The following section describes how EMF's and SDF's might learn and profit from each other strategies and how both styles not exclude each other but rather might be interwoven.

#### The way forward

Taking its potential into account, EMF should be developed from the inside out rather than from the outside. Their autonomous way of farming and close relation to the nature should be sustained. Developmental interventions and new practices should be incorporated within existing local agricultural structures, knowledge and multifunctional practices. SDF should be developed based on the strengths of EMF. The challenge is to develop dairy production into sustainable business and integrate it in multifunctional farming while respecting and sustaining local practices and knowledge. Due to the creativity and adaptability of the Ethiopian farmers, they will fill the gap of dairy production when certain preconditions are created. At the same time, farmers should firstly be encouraged to be as self sufficient as possible and secondly to integrate dairy production within their already existing multifunctional farming structure rather than specializing on only dairy production.

### Endogenous development

Altieri calls for a bottom-up policy when he states that development should be grounded in the available opportunities: the local natural resources and the knowledge and practices of local farmers. Local incentives and initiatives have to be triggered. Therefore, focal point of developing agriculture in Ethiopia must be on strengthening farmers from the inside strengths since agricultural development is more sustainable when it is 'born from within'. The often automatic assumption that modernization comes from the outside must change in a mindset that modernization can be achieved from the inside. Not linearity based on the past, innovation and increased market relations provide changes for development but growth and enrichment are hidden within a high degree of self sufficiency, a close relation with the nature and independence from markets. Farming practices must be enriched with the help of natural resources and improved labour processes.

Development of the farmers around the Sendaba Valley must be grounded in the already existing agricultural structure and cultural values, adapted to the actual opportunities and possibilities of the farmers. This process must be carried and controlled in cooperation with the farmers. Knowing that the farmers have a lot traditional knowledge on how to farm, their knowledge and practices are not to be replaced for new ones; rather it should be supplemented and extended with additional and different knowledge and practices. It is not a matter of implementing something new; it is a matter to enforce something old and connect it to something different to constitute sustainable farming.

#### Development of the dairy sector

Van der Ploeg argues that "connecting production and consumption as ordering principles" are "crucial parts of socio-technical networks" (van der Ploeg, 2003, pg. 41). As a lot stakeholders argued, development of the dairy sector (both at consumption and production level) and its processing might be an important element of the way forward for the farmers around the Sendaba Valley. The example of foreign influence in Debre Zeit showed that a healthy milk market and an improved process of production might increase the farmer's revenues, but that it also has problematic implications like a decrease of autonomy. Clearly there are opportunities in developing the dairy sector; yet there are also some difficulties to be dealt with. Although external influence should be minimized, foreign investments might, regardless the structure and nature of control, create opportunities for future. At the consumption side there must be an improvement of the dairy markets and processing companies. At the production side, farmers must be facilitated with improved feeding practices, milking, processing, storing and transporting the dairy products. Again, both practical facilitation and a change of mindset are needed.

Most importantly the farmers should not be forced to engage in dairy production. Taking into account the creativity and adaptability of the EMF's, it is likely that they will jump in the gap of the dairy markets, created by foreign investments and the increasing use of dairy products by Ethiopians. EMF's should be encouraged to incorporate dairy production into their original multifunctional farming strategies, and not contrariwise of incorporating the EMF's in the dairy market. The task of foreign investors is most importantly to create healthy preconditions at the market side. Dairy farming then should be integrated in the existing local practices and complement to the multifunctional character rather than to be a target of specialization. Dairy production must be an extension of the farming assortment rather than an alternative farming style.

Specializing entails some problematic complications. Specializing farmers are more vulnerable to income and production risks; they are more vulnerable to price fluctuations since maintenance of high milk prices can never be guaranteed; they have more difficulties to reach a high degree of self sufficiency; and as a result they increasingly get dependent to markets. The examples of Dutch specialized dairy farmers, of which a lot are actually not able to produce cost-covering, show how dairy producers can be confronted with high input expenditures and low output revenues when they increasingly get too dependent to the whimsicality of free markets.

To conclude, the problem is not dairy production itself, but the challenge is to develop dairy production into sustainable business and integrate it in multifunctional farming while respecting local practices and knowledge and sustaining autonomy.

### Local institutions and cooperation

To encourage local farmers to have an interfering voice in their development, or rather to define and determine their developmental pathway themselves, local institutions should be developed. Farmers should mutually discuss their practices and appoint several representatives who defend their interests when engaging in a negotiation with other farmers, the government and other external actors. The role of the latter should be minimized as much as possible, since the farmers themselves know their weaknesses and opportunities the best. Those local institutions must be established from the inside out rather than from the outside to criticize and evaluate own practices. Starting point is not what is appropriate in other (western) settings, but what is most profitable and sustainable for the local farmers. By establishing local institutions and involving the local farmers in the process of agricultural development, outcomes are ought to be the most sustainable and profitable.

The successful establishment of the cooperative in Ginchi shows that farmers have incentives to cooperate together and benefit from it. It provides a stronger position on the market and serves as a platform to share knowledge and resources. Farmers not only need facilitation to sustainably
develop themselves, but they must also be coordinated and cooperated together. The most important improvement the last few years, according to different farmers, is the fact that farmers are increasingly cooperating together to discuss different ways of production, to buy large amounts of materials for cheaper prices, to have a stronger market position and to discuss certain interventions with the government. When farmers cooperate, they will be stronger together. External actors should encourage the development of local institutions and initiatives from the inside out while at the same time minimizing their own roles. All the different little segmented parts of potential development should be brought together in a sustainable way forward.

"The ultimate challenge is to increase investment and research in agro-ecology and scale-up projects that have already proven to be successful to thousands of other farmers. This will generate a meaningful impact on the income, food security and environmental wellbeing of the world's population, especially of the millions of poor farmers yet untouched by modern agricultural technology". – Altieri, 2002

#### Implications of the results

The results from this research are important to implement policies that accurately meet the needs of the local farmers around the Sendaba Valley. It means that this policy must be grounded in the local structure and context and that it should adapt to the circumstances of the local farmers. The results show that development of the farmers is a complicated process and that external influences must be seen as facilitating preconditions to encourage the farmer's economic initiatives rather than implementing something completely new. Although this research could be seen as an appreciated starting point, its outcomes show that further research definitely is needed to translate the results into sustainable and workable practices. Some recommendations are given in the last chapter. As follows, the quality and adequacy of the results and research methods are discussed.

#### Interview

The interviews appeared to be important sources of information. Through my meetings with different stakeholders like agricultural workers, policy makers, governmental workers, pharmacists, veterinarians, foreign investors and many others I was able to draw this first sketch of the farmers around the Sendaba Valley. It struck that different stakeholders gave different answers. For example: a governmental worker argued that the most important development of the last few years was the development of pesticides, herbicides and insecticides. However, almost all farmers mentioned that the added value of those products is not quite high since they lack knowledge on how to properly use them. This once again shows how agro-industrialist and agro-ecologist theories and practices don't meet each other. Besides interpreting the different visions and interests well, it also has been difficult to value their different inputs appropriately due to their (un)conscious lack of completeness.

#### Participant observation

During my fieldwork I have been using my eyes rather than my ears and mouth. It happened a lot that I saw several practices that were different than the way the farmers described them. One example is that I asked a farmer whether he was using concentrates or not. Half an hour after he answered that he was not using concentrates, I saw some bags of concentrates. It appeared that he indeed was using concentrates. I've been visiting a large amount of farmers, of which nine are used for intensive case studies. While observing the different farms I verified with my eyes the information that I heard with my ears. The participant observation was indispensable to validate data.

# Questionnaire

Knowing that the participant observation has been very important to value the information derived from interviews, it is difficult to mention the value and reliability of the information derived from the questionnaires because I was not able to verify all the data given in the questionnaire. Although it

sometimes was difficult to accompany the questionnaire appropriately, it could have happened that some farmers didn't understand the questions well due to translation or terminology. However, since 107 respondents completed the questionnaire, it is arguable that at least the main features of the farms have become visible. In this case, the questionnaire functioned as a proper mean to introduce the farmer's practices shortly at first sight.

# Limitations and reflexivity

Beside the before mentioned strengths and weaknesses of the different research methods, also some other limitations of the quality of the results need to be elaborated. Since my brother has been one of my principals and since I was accommodated at the Grazeland farm during my fieldwork, my role as a researcher was certainly influenced by my personal interest in the functioning of the Grazeland farm. My own vision, integrity and objectivity could have been (unconsciously) unbalanced with regard to role of foreign investors and the local farmers as well as the way the farmers assessed me. They might (un)consciously provided me wrong or incomplete information, especially with respect to their attitude towards foreign investors. Respondents may have had the idea that I could be profitable for them, which could have resulted in strategic or socially desirable answers.

The overall quality of the results could be discussed looking at the different stakeholders, interests and subjectivities involved within this research. Did the farmers tell me all the information they had? Did they might forget to tell important practices? Was I, as a researcher, able to discover all the needed parts of the puzzle? Did the respondents understand my questions? Was I able to distinguish the important information from the less irrelevant information? The fact that the several stakeholders have had different interests also might have constructed my information subjectively. It appeared that governmental workers had different incentives than the farmers and that foreigners had different views than local investors. The question remains whether and to which extent I was able to separate the chaff from the wheat or not.

Lastly, due to the fact that all my communication with the local farmers happened through translation by local people, it is possible that this translation caused differences in what I wanted to ask informants and what informants wanted to tell me.

# Recommendations

An elaboration of the farmer's practices and strategies is presented in the previous chapters. Still the question remains what implications those results have for the functioning and establishment of foreign farms. Since this research was aimed at drawing a sketch of the local farmers instead of translating this into appropriate interventions, a follow-up study is needed to define follow-up action. Some incentives for follow-up research are already planned by another student from the Wageningen University. His main topic of research will be on how to be sensitive to the local structures and practices and how to sustain multifunctional farming. Jan van der Lee, senior advisor sustainable livestock systems from the Centre for Development Innovation is involved in this follow-up study as well. My first recommendation would be that foreign farms must keep on engaging with science and local research to keep being sensitive to what actually is needed. To offer a starting point to push follow-up research in the right direction, I have developed the following recommendations.

#### Focus on endogenous based development

This research showed that two farming styles are prevalent in the Sendaba Valley. Foreign investors should take their strengths and weaknesses into consideration when engaging in a long-term cooperative with the local farmers. The multifunctional character of local farming should be sustained and used as a basis of the integration of additional activities and practices. Foreign investors should accept that not their western normativity but rather local values should determine agricultural development. Being independent from markets might be more sustainable and profitable than relying on markets to mobilize resources, which is often the case in the western world. In Ethiopia, often other rules and values determine agricultural development than in the western world. The challenge for foreigners is to first learn both strengths and weaknesses from local farmers before pretending to know what's going wrong and what should be improved.

#### Don't be a model farm...

In the project plan of the Grazeland farm it is mentioned that the Grazeland farms wants to be a model farm for the local farmers. During my fieldwork it appeared that the idea of model farming is a traditional way of Ethiopian farming since farmers discuss agricultural practices regularly and copy each other's profitable behaviour. When some farmers prove that certain pathways and strategies are profitable, other farmers follow. Yet, although the idea of model farming matches local values, it is clear that the behaviour of foreign farms isn't copyable for the local farmers. More importantly, attempting to be a model farming implies that foreigners pretend to be better and have more know-how, which is proven by this research not to be always the case. Model farms also encourage development from the outside rather than from the inside. Foreign farms should get rid of the idea of modelling and step out-of-the-box of western agro-industrialist thinking. Local strategies and opportunities should be adapted, sustained and developed.

#### ... but facilitate Ethiopian pilot farms

My suggestion is that not foreign model farms are needed to develop the local farmers, but that local Ethiopian model farmers are needed to change mainstream thinking and to increase productivity and revenues. In between foreign farms and the local farmers there must act some successful Ethiopian pilot farmers as models who translate the agro-industrialist ideas of foreign farms into suitable small scale agro-ecological practices that are possible to copy for other farmers within the local context. The role of foreign investors then is to support those pilot farms and facilitate needed preconditions at both farm and market level. By triggering economic opportunities and chances, farmers can be expected to show incentives to adopt different practices and incorporate new opportunities within their multifunctional farming strategies. Practices that may be taught and demonstrated are how to increase the production of milk, how to trade milk as a marketable product, how to feed the cows

appropriately, how to efficiently produce crops, how to increase productivity, how to decrease intensity of the labour process, how to use new resources and how to invest revenues properly and efficiently. These practices must serve to sustain the high level of self sufficiency of the farmers by encouraging the use and production of natural resources.

# Integrate dairy farming in multifunctional farming

Foreign investors should not focus on supporting the poorest of the poor since this is not efficient and not a sign of development from the inside. The focus must be on farmers who (want to) aim at dairy production, from which the poorest of the poor might copy profitable practices. Target group should be novice dairy producers who have characteristics of multifunctional farming and who try to be as self sufficient as possible, although this increasingly becomes difficult for them. New resources introduced at the farms should aim at increasing production and enlarging the opportunities of increasing the level of self sufficiency in future and should be accompanied with required knowledge. Examples are improved seeds and improved but suitable cattle races. Besides increasing the productivity, also the amount of land that is cultivated might be increased. Encouraging dairy production and consumption could be realized by providing Frysian Holstein bulls, by improving the functioning of dairy markets, by connecting farmers to them and by providing storage, transport and processing of dairy products. Developing the dairy sector and integrate it in traditional farming strategies still maintains the importance of taking the local context into account, limiting the input of external resources as much as possible, accompanying new resources with required knowledge, maintaining the multifunctional character of farming and encouraging and supporting farmers to be as self sufficient as possible. Exposure of farmers to the whimsicality of markets should be minimized as much as possible. The challenge is not to implement something new, but to integrate something additional in already existing structures.

#### Focus on relation with the community

Foreign investors should focus on a good relation with the local community. As mentioned in chapter three, the establishment of the Grazeland farm has been accompanied by some hard feelings from local farmers. Part of the community sees the Grazeland farm as an opportunity for a step forward, another part still doubts about the reliability and real incentives of the Grazeland farm. Knowing that Ethiopians mainly first have to see before they believe, it is important that the Grazeland farm as fast as possible starts to demonstrate its potential positive influences. The relation with the community must be optimized because supporting local farmers actually is the main purpose of the Grazeland farm. I would even suggest that success of the Grazeland farm stands or falls by the grace of the local community since they have to take their chances to develop themselves from the inside out.

#### **Recommendations from De Schutter**

De Schutter, an agro-ecologist writer, describes some specific guidelines for both governments and foreign investors with respect to rural development based on agro-ecology (De Schutter, 2012)<sup>2</sup>. Following these guidelines would encourage sustainable development from the inside out.

# Government

As part of their obligation to devote the maximum of their available resources to the progressive realization of the right to food, states should implement public policies supporting the adoption of agro-ecological practices by:

1. Making reference to agro-ecology and sustainable agriculture in national strategies for the realisation of the right to food and by including measures adopted in the agricultural sector

<sup>&</sup>lt;sup>2</sup> A complete elaboration might be found in: De Schutter, O. (2012). *Report submitted by the Special Reporter on the right to food. Women rights and the right to food.* A/HRC/22/50, 24 December.

in national adaptation plans of action (NAPAs) and in the list of nationally appropriate mitigation actions (NAMAs) adopted by countries in their efforts to mitigate climate change.

- 2. Reorienting public spending in agriculture by prioritizing the provision of public goods, such as extension services, rural infrastructures and agricultural research, and by building on the complementary strengths of seeds-and-breeds and agro-ecological methods, allocating resources to both, and exploring the synergies, such as linking fertilizer subsidies directly to agro-ecological investments on the farm ("subsidy to sustainability").
- 3. Supporting decentralized participatory research and the dissemination of knowledge about the best sustainable agricultural practices by relying on existing farmers' organisations and networks, and including schemes designed specifically for women.
- 4. Improving the ability of producers practicing sustainable agriculture to access markets, using instruments such as public procurement, credit, farmers' markets, and creating a supportive trade and macroeconomic framework.

# Foreign investors

By supporting rural development, foreign investors should:

- 1. Engage in long-term relationships with partner countries, supporting ambitious programs and policies to scale up agro-ecological approaches for lasting change, including genuine multi-polar engagement with public authorities and experts and existing local organizations of food providers farmers, pastoralists, forest dwellers) and the networks they form, such as ROPPA, ESAFF, La Via Campesina, and PELUM, which have accumulated experience that could be the basis for rapid scaling-up of best practices.
- 2. Encourage South-South and North-South cooperation on the dissemination and adoption of agro-ecological practices.
- 3. Support agricultural development by investing in public goods rather than private goods, and encourage participatory approaches and co-construction in research, extension and public policies.
- 4. Fund regional and national knowledge platforms to gather and disseminate best practices in agro-ecology from the field to landscape levels.

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# **Appendix – Example of the questionnaire**

The questionnaire I've conducted is copied below. The questionnaire was translated in local language to enable the farmers to read the questions themselves.

Dear mister,

My name is Roger and I am conducting a research for my study which I follow in Holland. I am here in Ethiopia to see how agriculture is organized in the Oromia region. This list with questions is part of my study and may hopefully provide me information that I need. I would like to ask you to take around 10 minutes of your time to answer all the questions. Thank you very much!

If you have any questions, you may call me at number 0943116609.

Most answers you have to choose between the given answers. When you see ... then you write your own answer.

| Questions   | Answers  |                      |                                 |                     |  |
|---|--|----------------------|---------------------------------|---------------------|--|
| Is agriculture your most important source of income?  | Yes  |                      | No                              |                     |  |
| Have you always been a farmer?  | Yes  |                      | No                              |                     |  |
| How many family members are living at your farm?<br>And how many of them work at the farm?                          |  |                      |                                 |                     |  |
| What is the main focus of your farm?  | Livestock  | Crop production      |                                 | Dairy production    |  |
| What is most profitable at your farm?   | Livestock  | tock Crop production |                                 | on Dairy production |  |
| Is there a change in dairy production at your farm?   | Increasing Decreasing  |                      | g                               | No difference       |  |
| And if yes, since when is this change happening?  |  |                      |                                 |                     |  |
| How much hectare land do you personally use?  |  |                      |                                 |                     |  |
| What kind of cattle do you have,<br>and how many do you have?   | Cow<br>Bull<br>Oxen<br>Sheep<br>Goat<br>Chicken<br>Horse<br>Donkey |                      | ···<br>···<br>···<br>···<br>··· |                     |  |
| What are your three most important resources?<br>(for example: water, electricity, feed, seed, land, cattle, tools) | 1<br>2<br>3  |                      | <br>                            |                     |  |
| How do you get the feed for you cattle?   | % own pr   | oduction             | % market                        |                     |  |
| How do you get the seeds of the crops?  | % own production   |                      | % market                        |                     |  |
| How do you try to improve crop production?  |  |                      |                                 |                     |  |
| How many males are working at the farm?   |  |                      |                                 |                     |  |
| How many females are working at the farm?   |  |                      |                                 |                     |  |
| How many paid employers work at the farm?   |  |                      |                                 |                     |  |
| How long do they work each day?   | Few hours Half day Whole day                                       |                      |                                 | Whole day           |  |

| Who is the owner of the farm, the cattle and the crops?                      | Father             | Mother                   | Son                     | Relative                        |  |  |
|--|--------------------|--------------------------|-------------------------|---------------------------------|--|--|
| How much of your crop production do you use or sell?                         | % owr              | n use                    | % sell at market        |                                 |  |  |
| Where do you sell your products?   |                    |                          |                         |                                 |  |  |
| Who receives revenues after selling products at the market?                  | Father             | Mother                   | Son                     | Relative                        |  |  |
| How large percentage of the revenues is re-invested in the farm?             | %                  |                          |                         |                                 |  |  |
| Why do you have a farm?  | No other<br>choice | lt is cultural<br>normal | Got it fro<br>your fath | om Farming is<br>ner profitable |  |  |
| What is your future plan?  |                    |                          |                         |                                 |  |  |
| How much Birr do you earn with non-agricultural activities beside your farm? |                    |                          |                         |                                 |  |  |
| How is the influence of the government on your farm?                         | Low                | Medium                   | ı                       | Large                           |  |  |
| And is the influence rather supporting or restricting?                       | Supporting         |                          | Restricting             |                                 |  |  |
| Do you experience competition from large foreign farms?                      | Little Medium      |                          | ı                       | Much                            |  |  |
| And is the influence rather supporting or restricting?                       | Supporting         |                          | Restricting             |                                 |  |  |